STATISTISCHE VOORSPELLING VAN DE BODEMLIGGING IN RIVIERBOCHTEN

H.Nijdam

Delft, mei 1973

BIJLAGEN

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VAN DE

BODEMLIGGING IN RIVIERBOCHTEN

door

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1) Omvang van het vervoer per binnenschip op de Nederlandse wateren

2) Dwarsprofielen van km 937 t/m km 952

3) a: Orthogonale polynomen van Legendre
   b: Orthogonale polynomen van Laguerre
   c: Orthogonale polynomen van Hermite
   d: Orthogonale polynomen van Tsjebysjev

4) Variantieschatting met histogram

5) a: Algol programma voor berekening A-coëfficiënten met 6 polynomen
   b: Algol programma voor berekening dwarsprofielen m.b.v. de uit 5a) gevonden matrices A e.d.

6) A-coëfficiënten voor 6 polynomen

7) A-coëfficiënten voor 7 polynomen

8) Plotprogramma

9) Dwarsprofielen bij Nijmegen km 873E t/m 874F

10) Kaart bochtafsnijding bij St. Andries R = 1900 m

11) Dwarsprofielen van de bochtafsnijding bij St. Andries R = 1900 m

12) Kaart bochtafsnijding bij St. Andries R = 3000 m

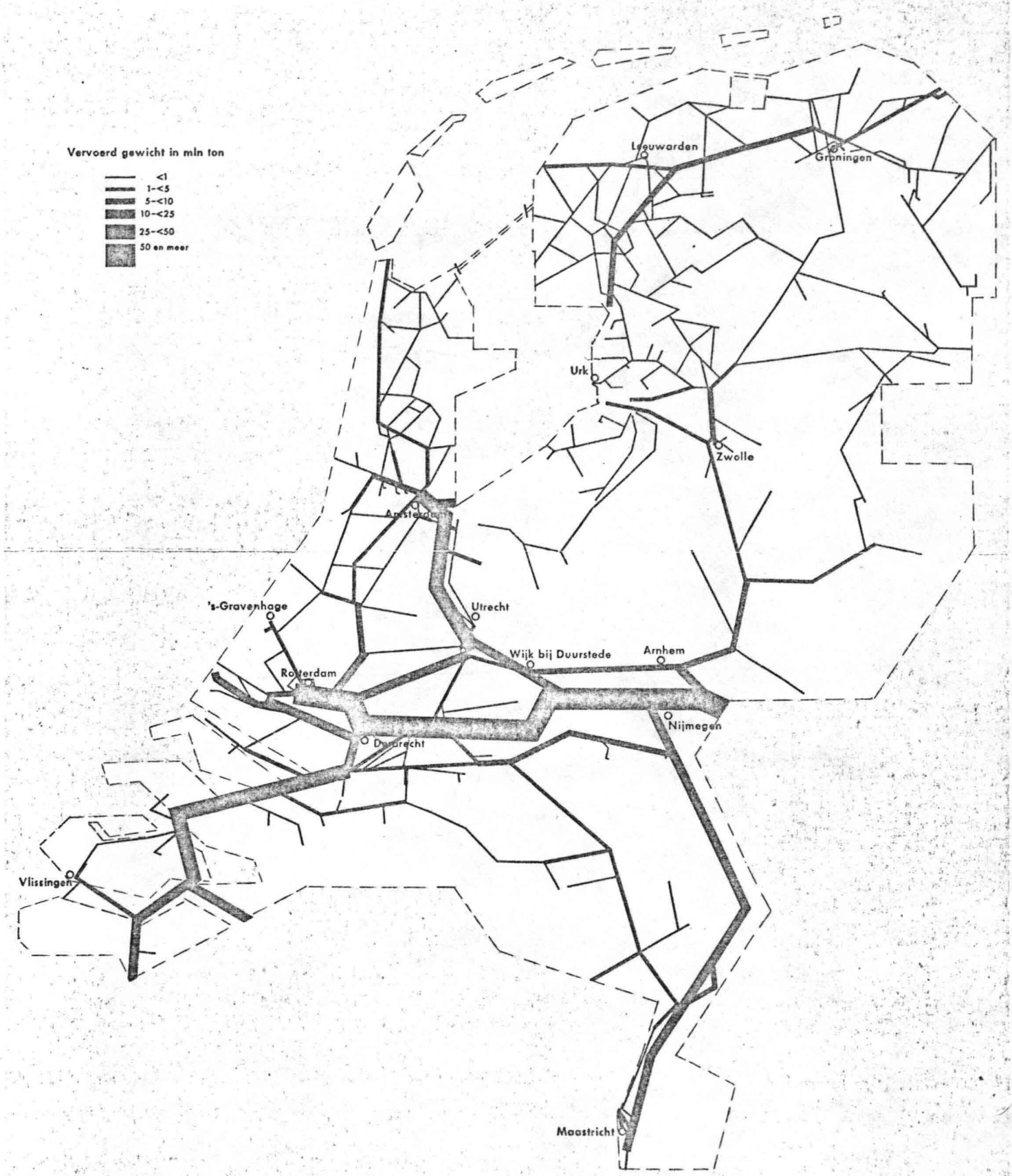
13) Dwarsprofielen van de bochtafsnijding bij St. Andries R = 3000 m

14) Plus-min kaart van km 937 t/m km 943

Kaart 2

Omvang van het vervoer per binnenschip op de Nederlandse waterwegen in 1971

Excl. vaarwegen uitsluitend bevaarbaar door schepen van <50 ton



BIJLAGE 1

LEGENDA:

HORIZONTALE SCHAAL : 1 cm ≙ 20 m

DIEPTE SCHAAL : 1 cm ≙ 1 m

———— BESTAANDE DWARSPROFIEL

- - - - - - - - - BEREKEND DWARSPROFIEL GEBRUIKMAKEND VAN DE VOLLEDIGE B

— · — · — · — BEREKEND DWARSPROFIEL GEBRUIKMAKEND VAN DE GEREDUCEERDE B

— · · — · · — BEREKEND DWARSPROFIEL MET 7-POLYNOMEN

BYLAGE 2

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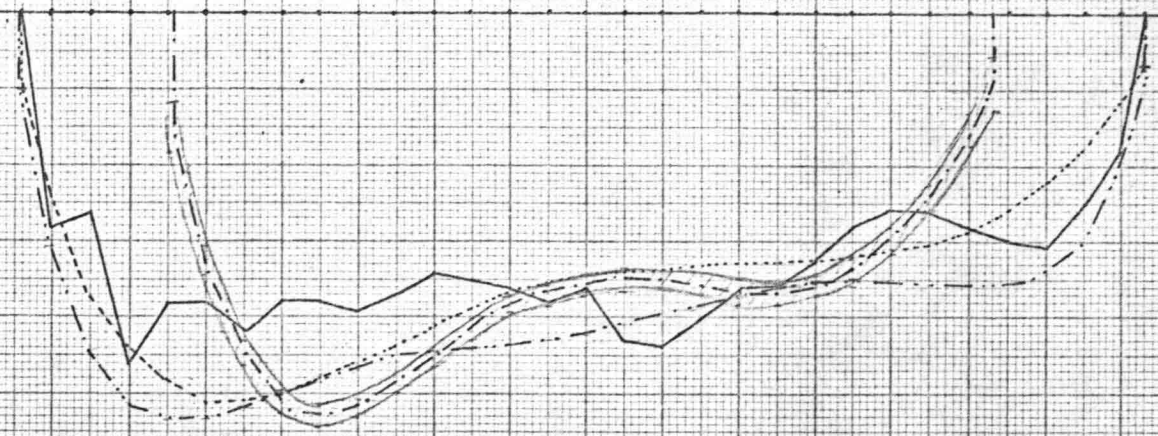

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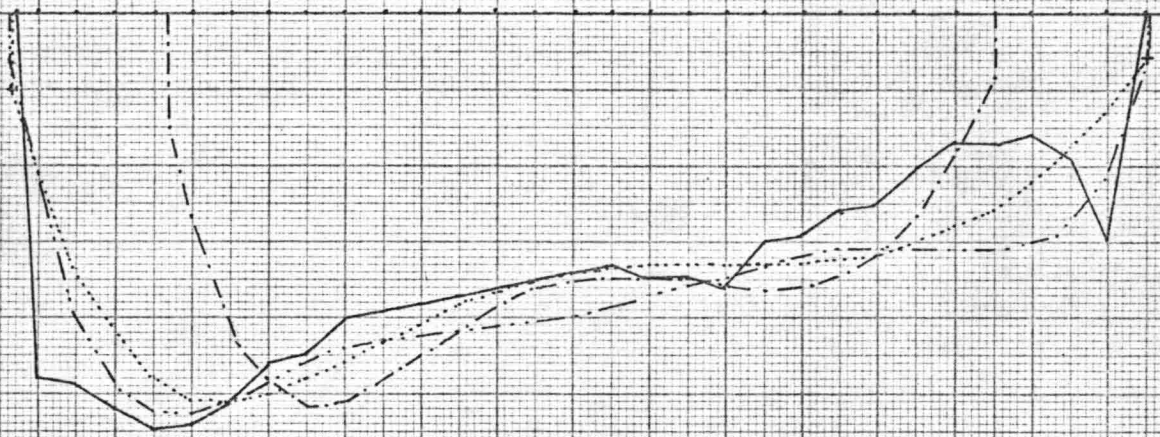

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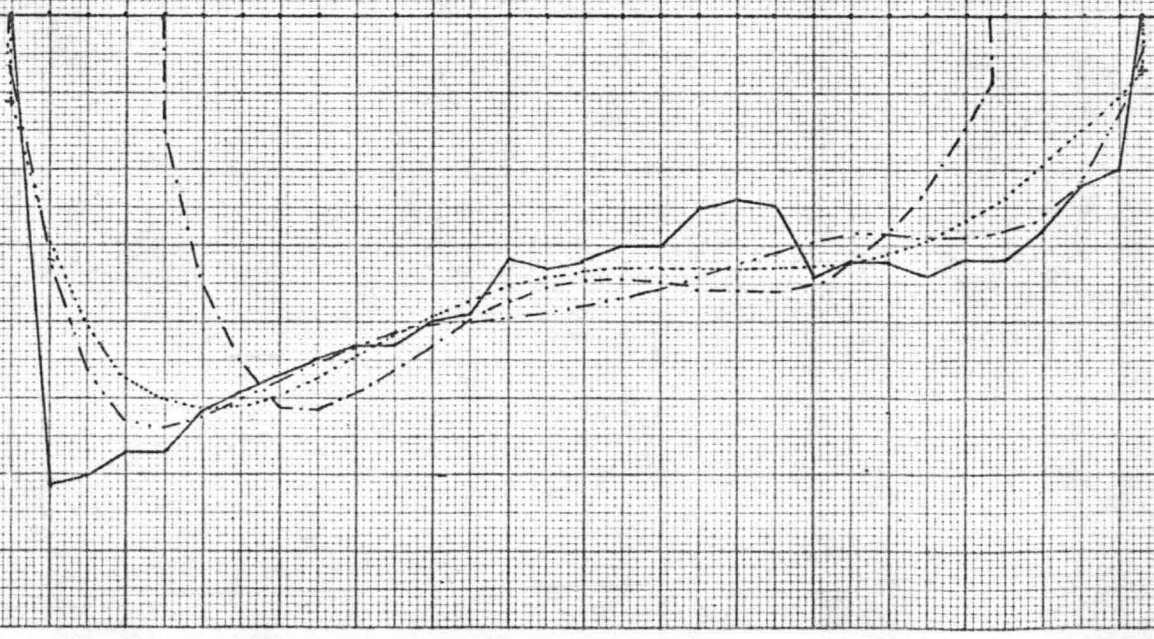

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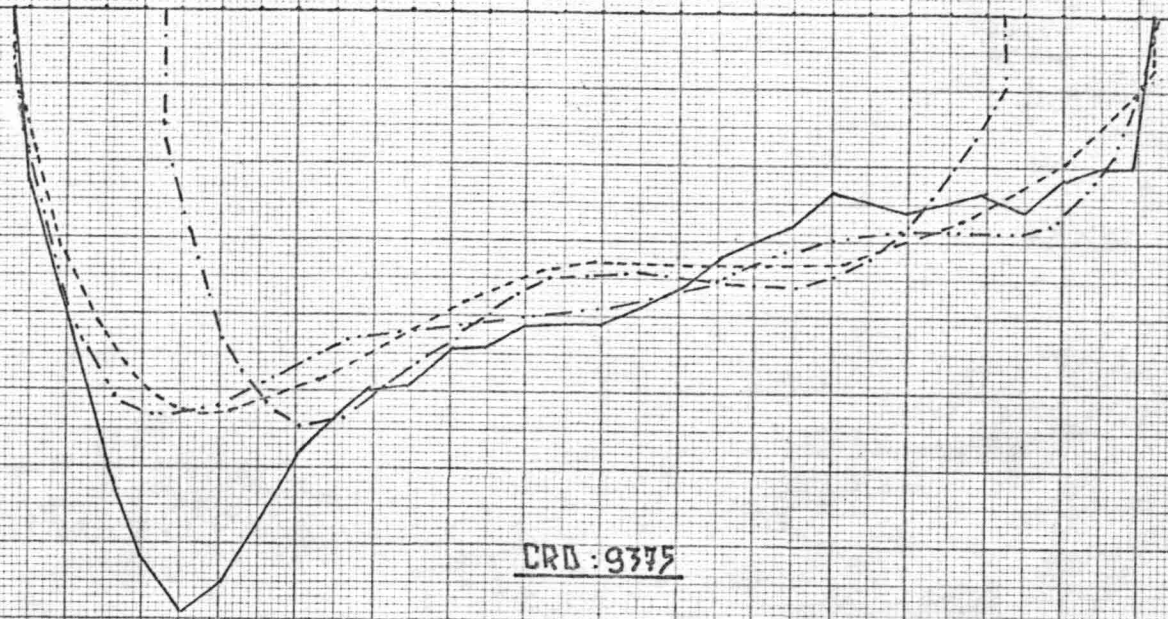

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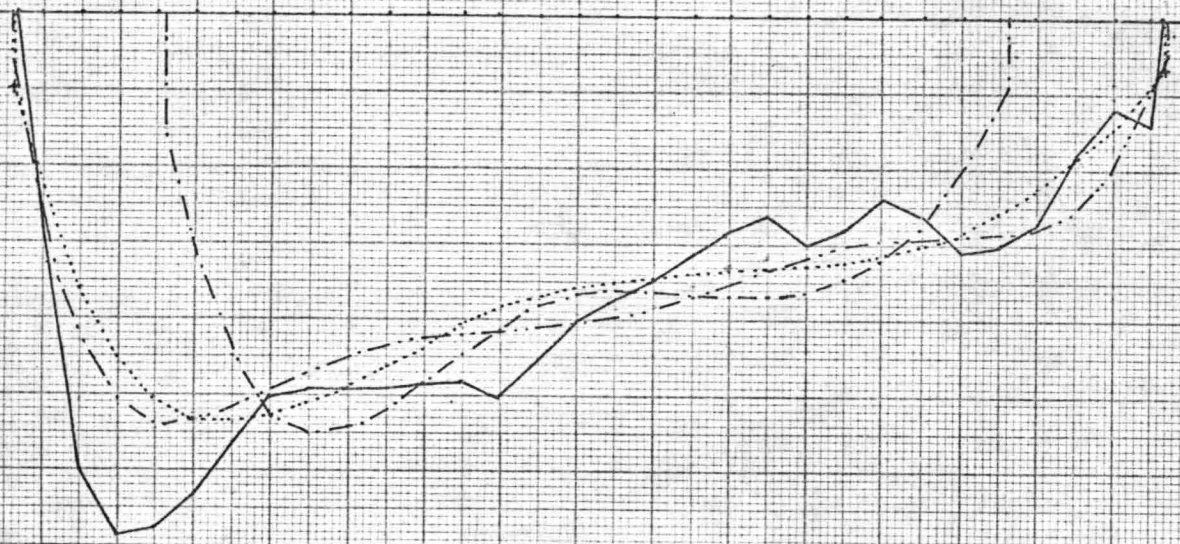

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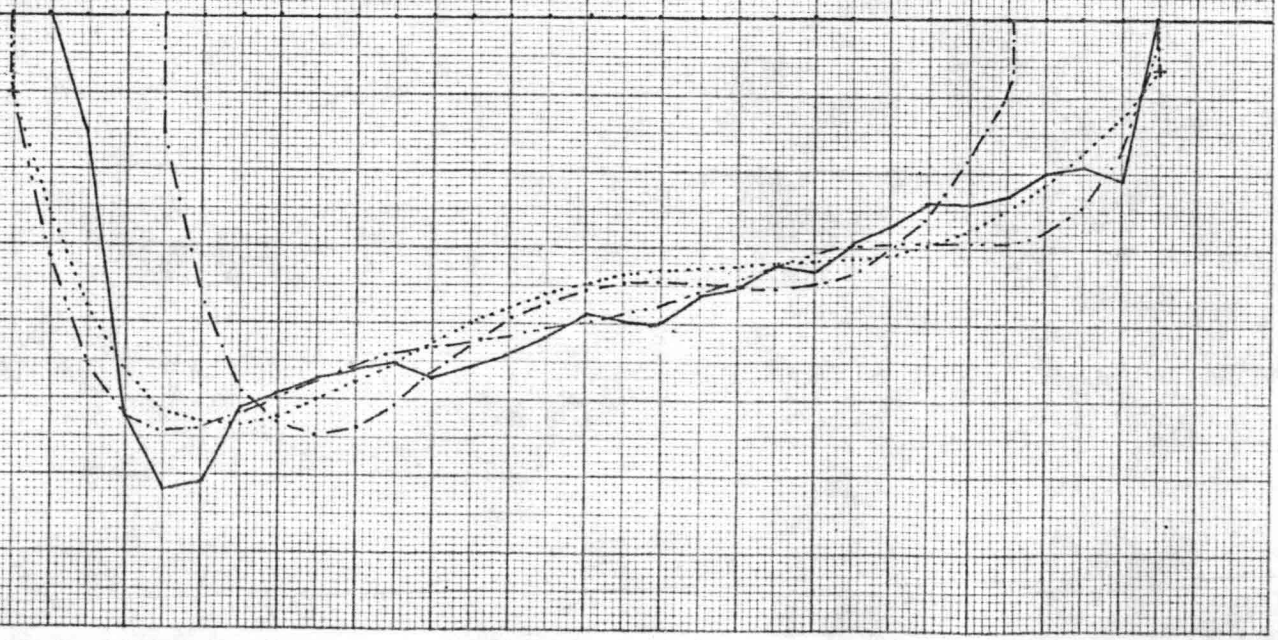

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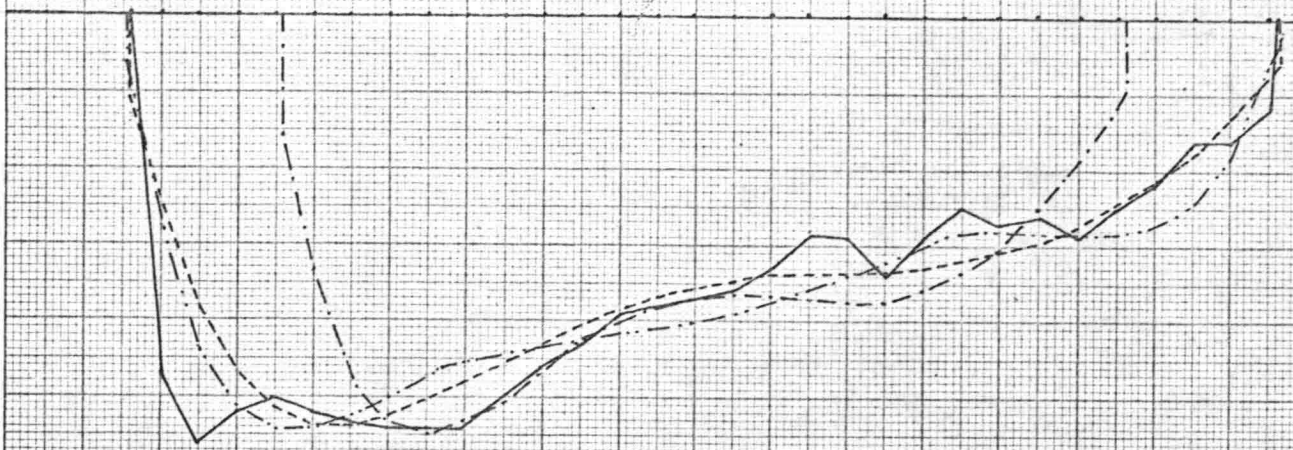

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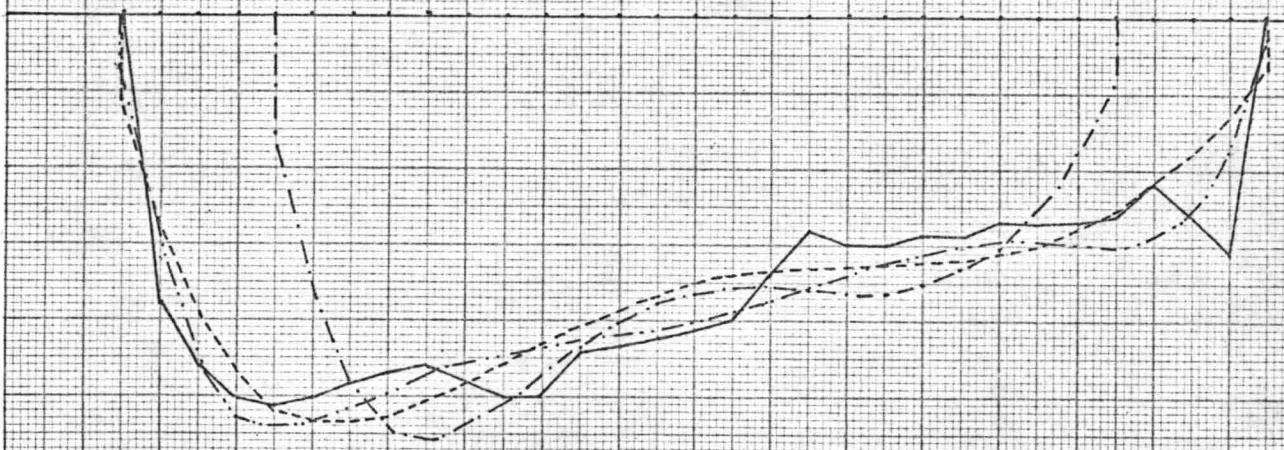

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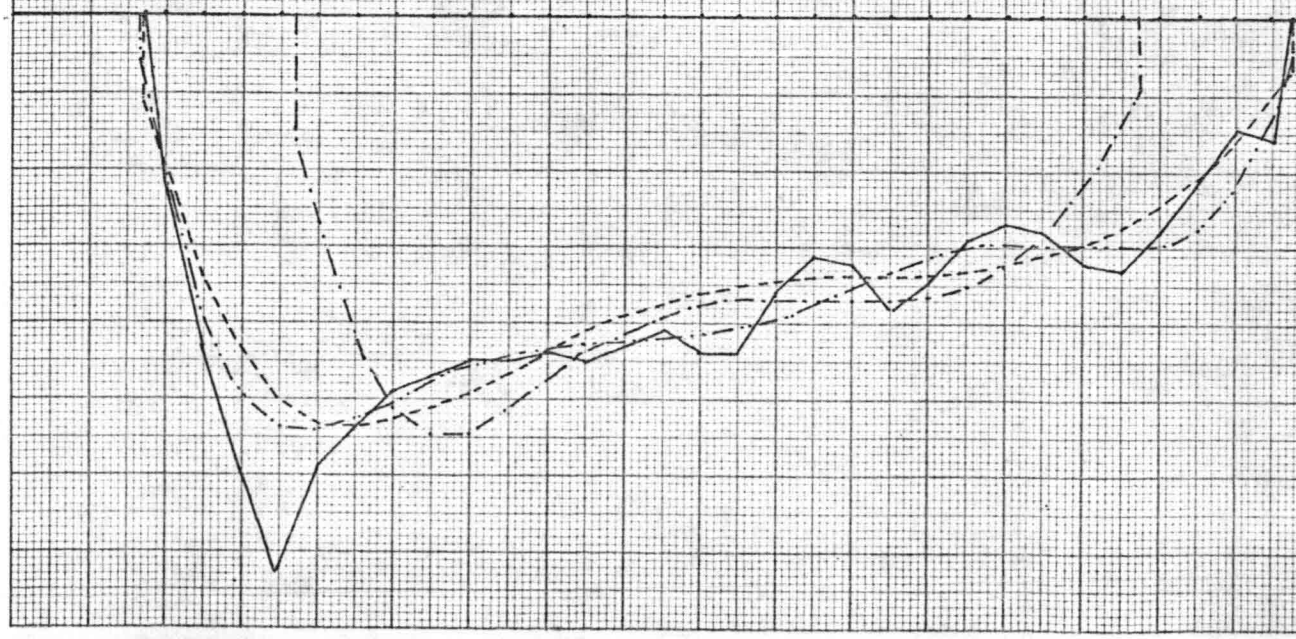

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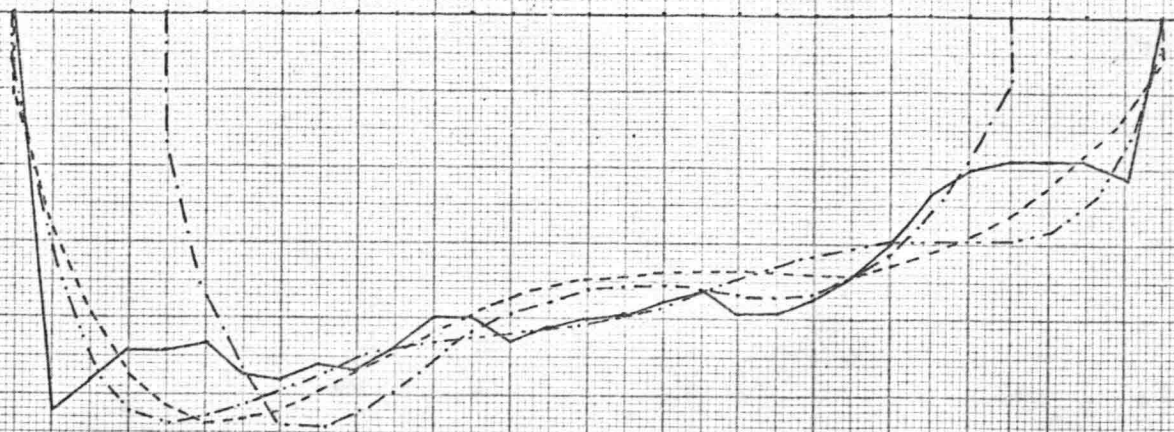

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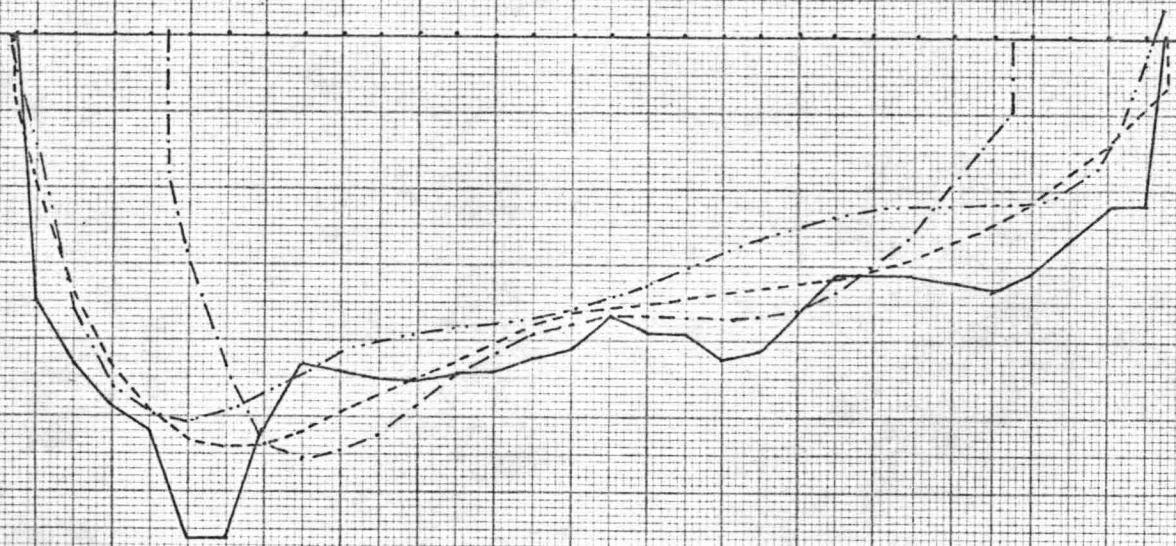

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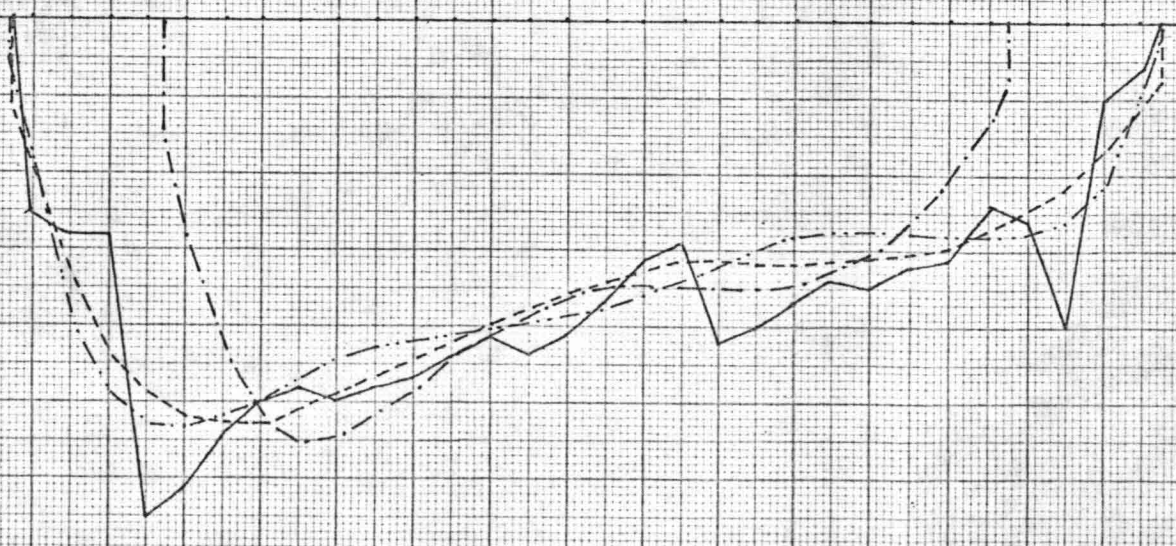

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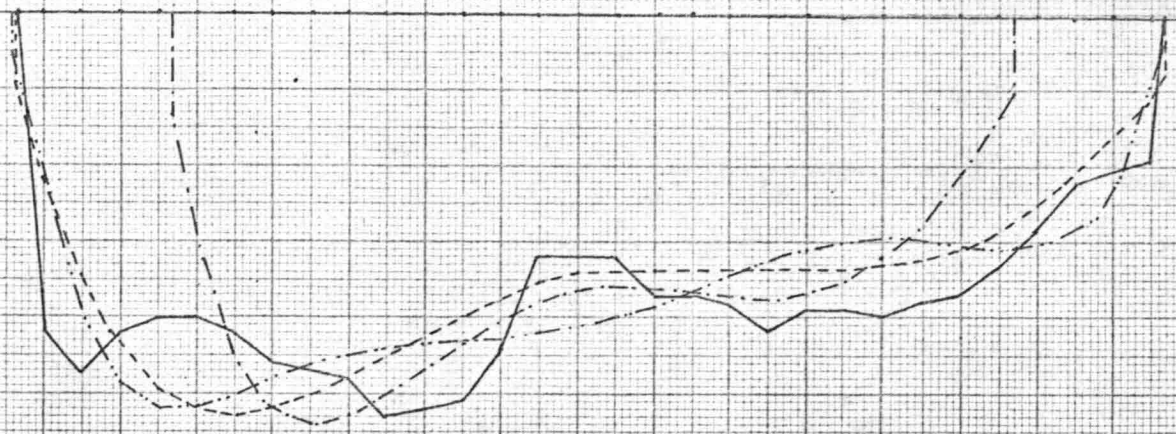

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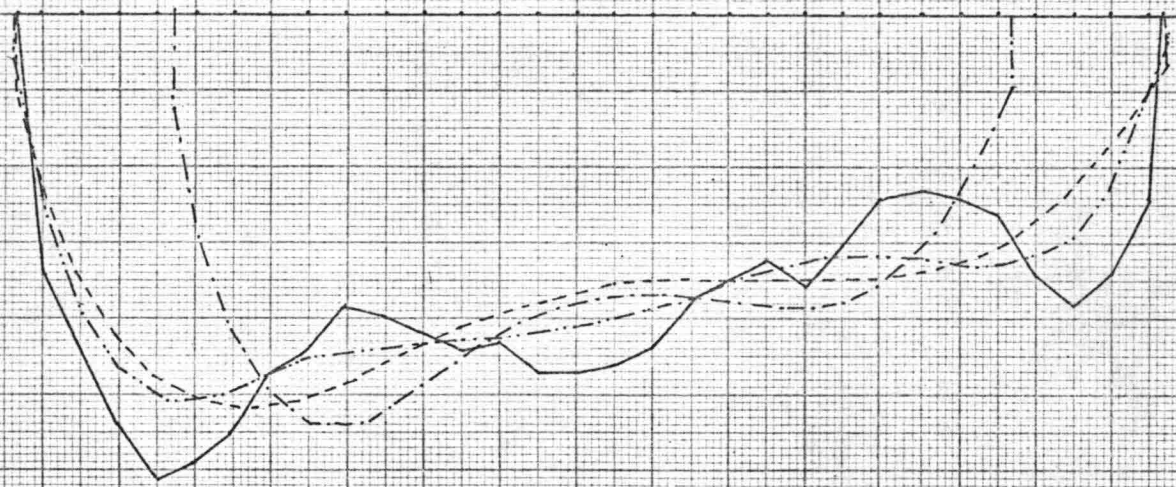

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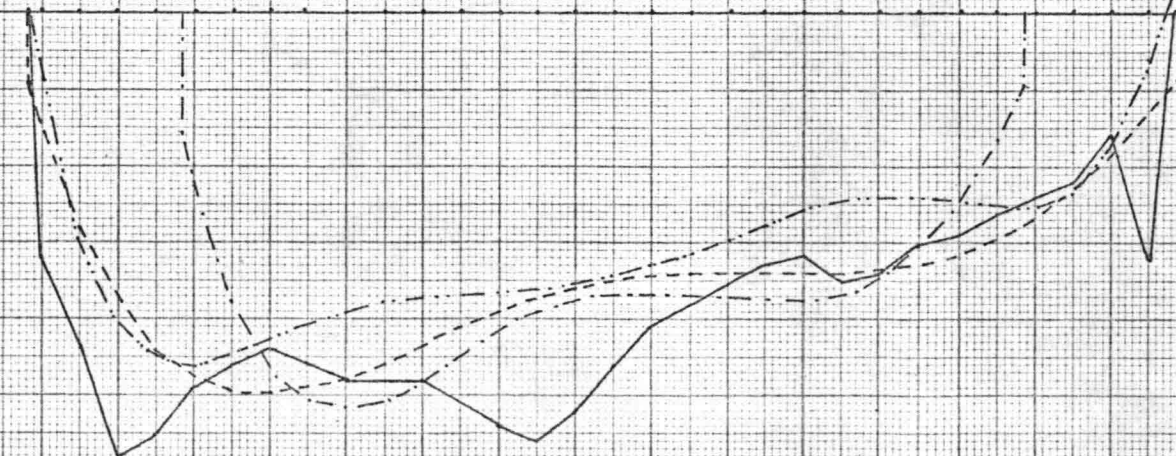

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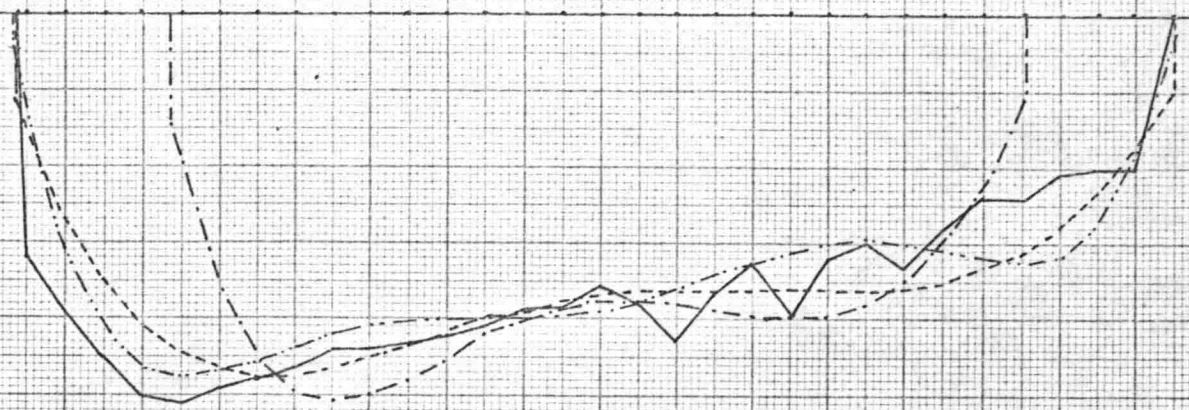

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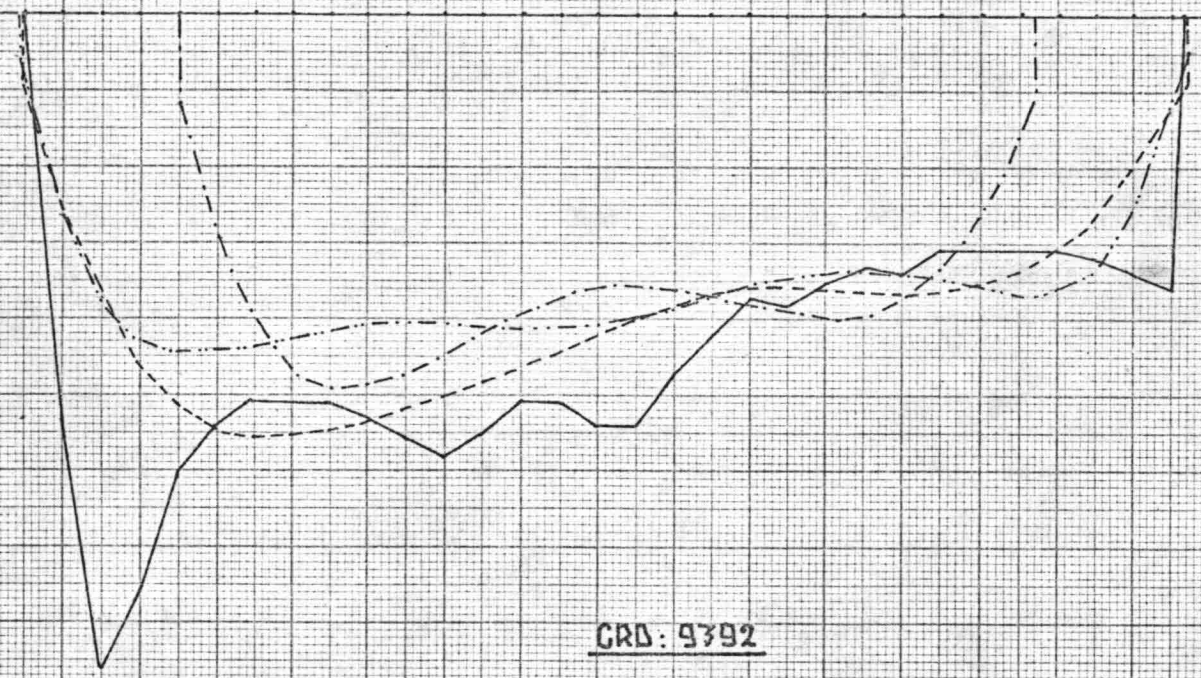

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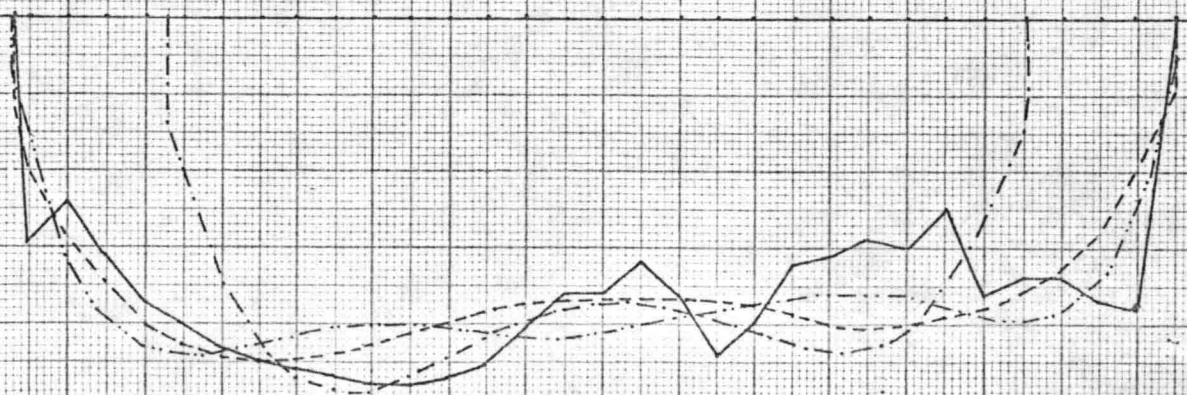

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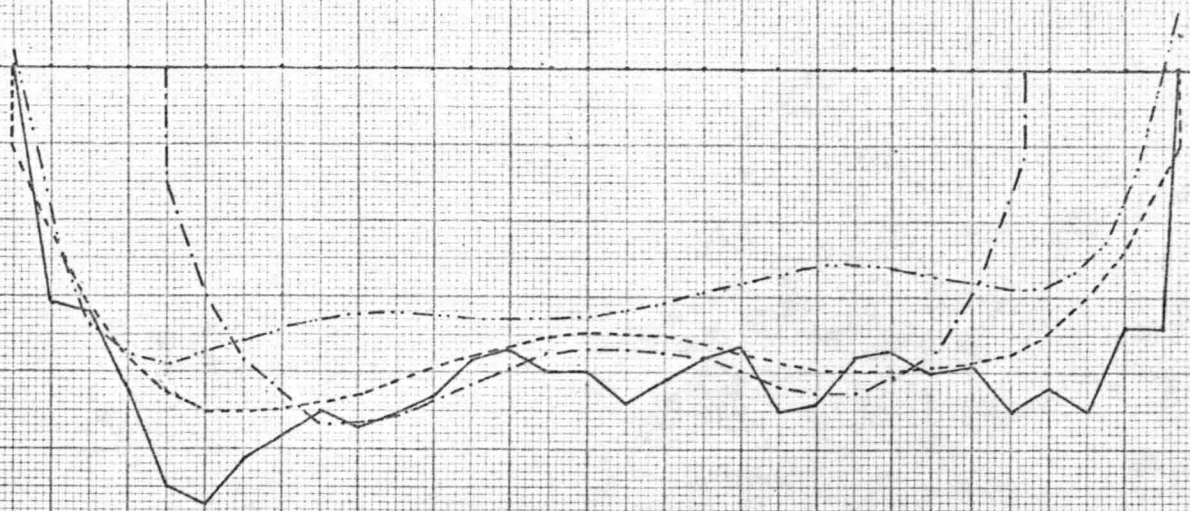

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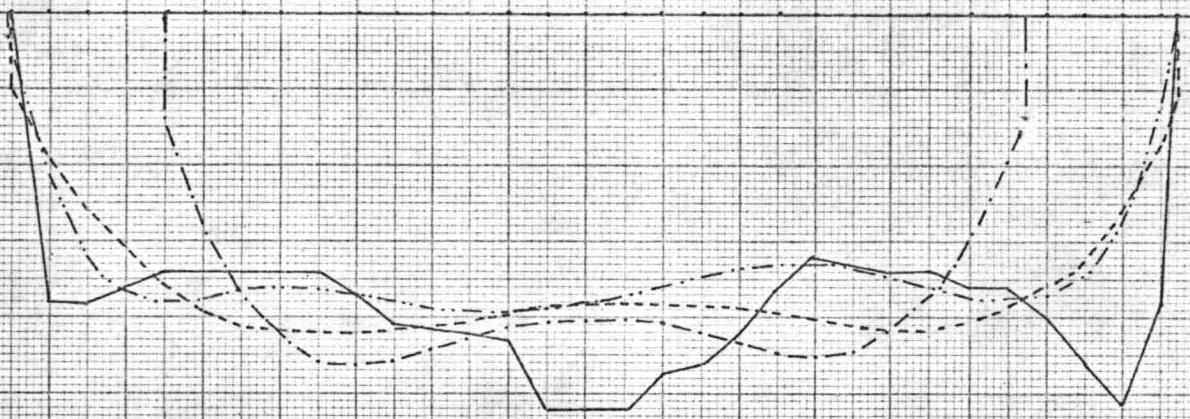

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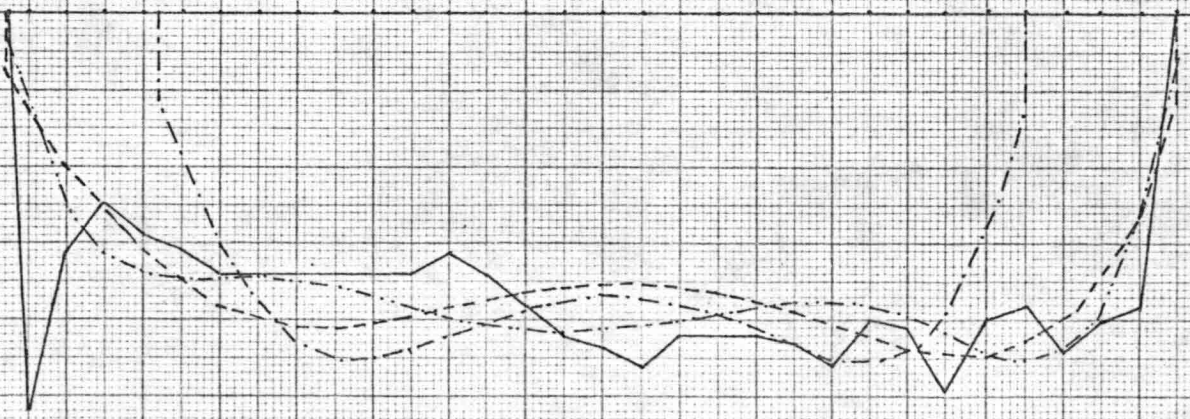

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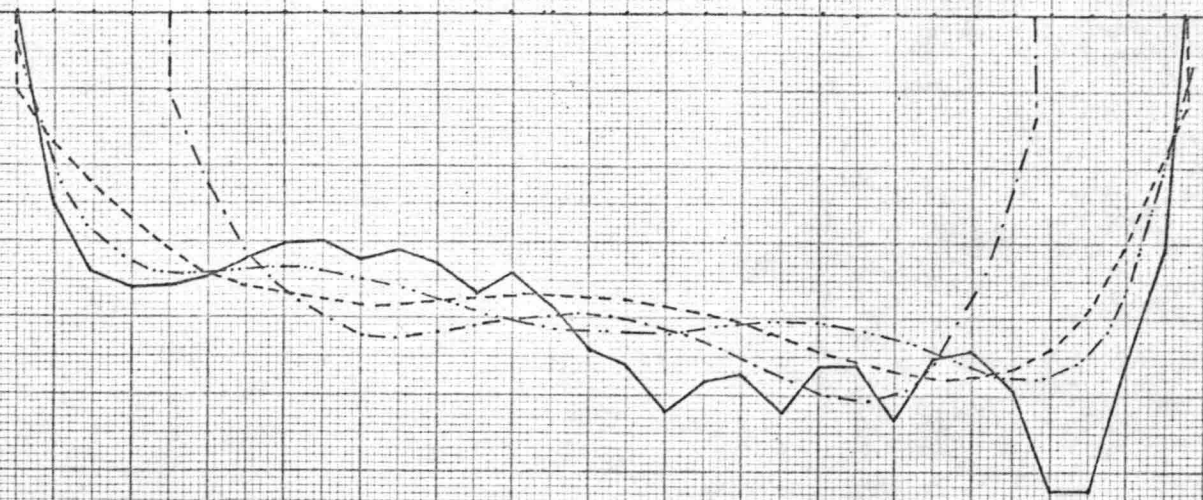

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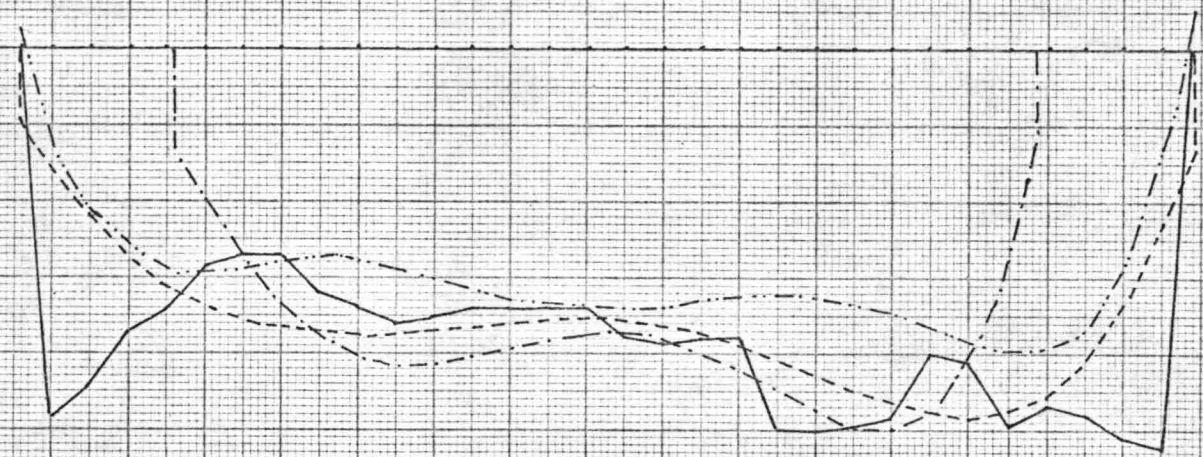

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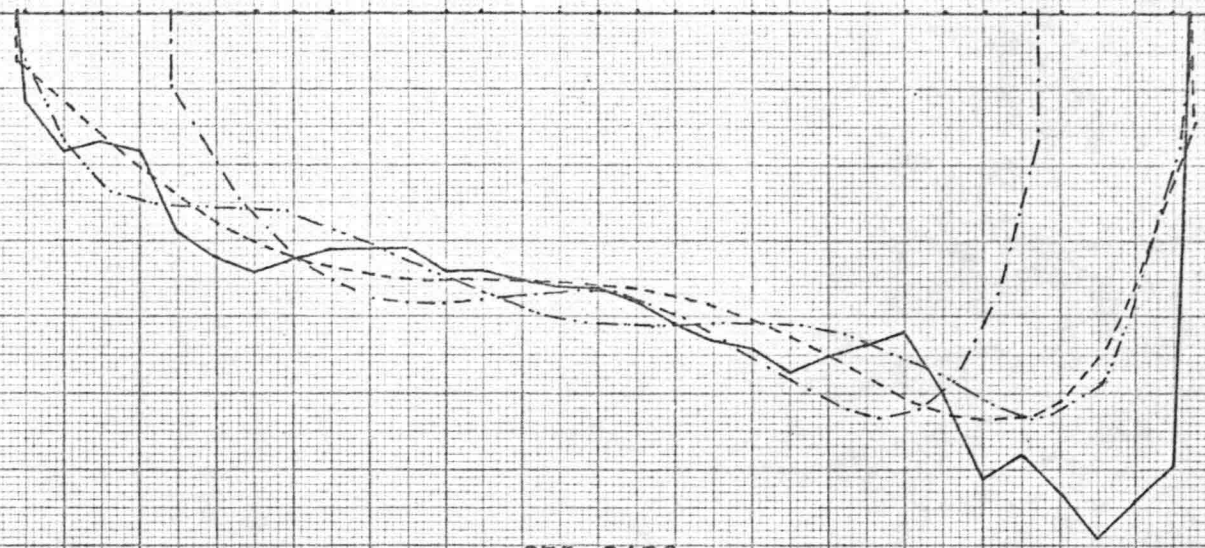

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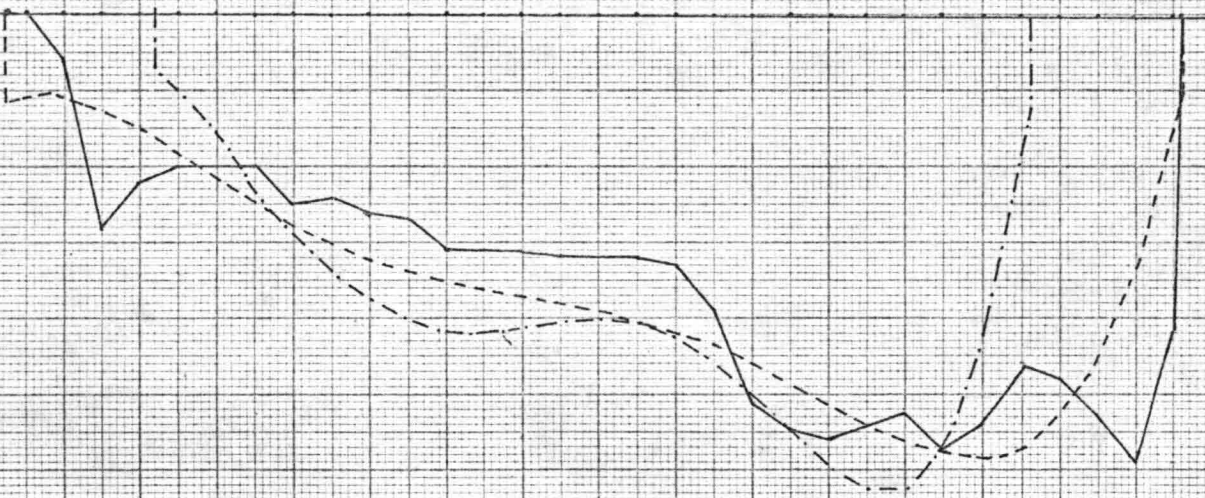

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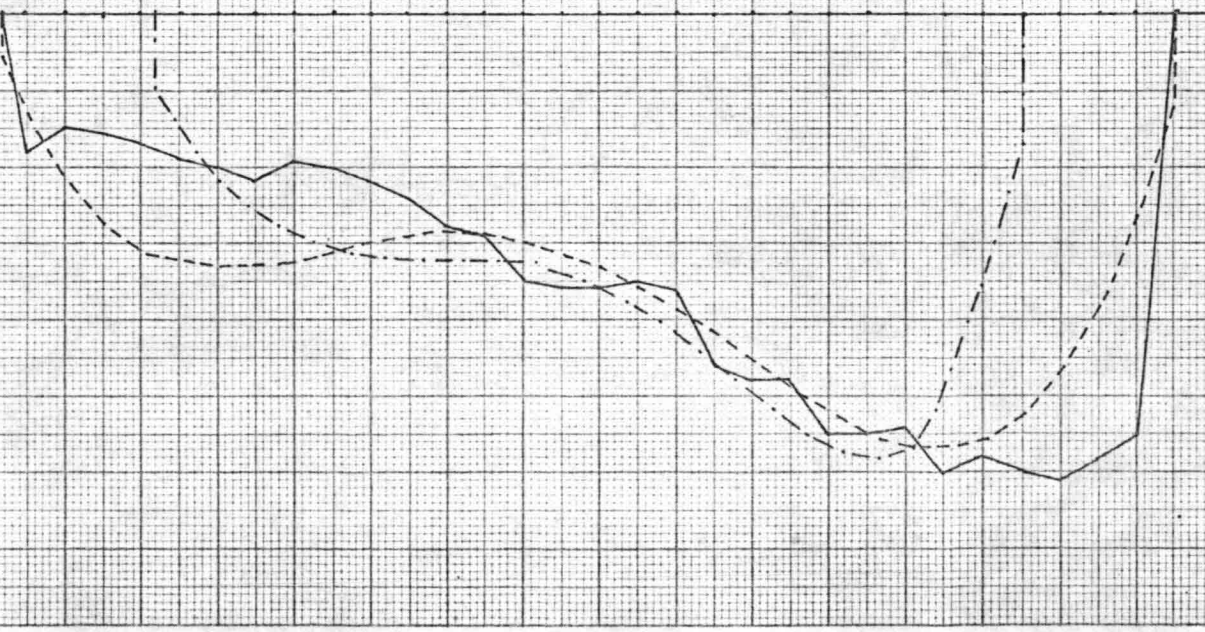

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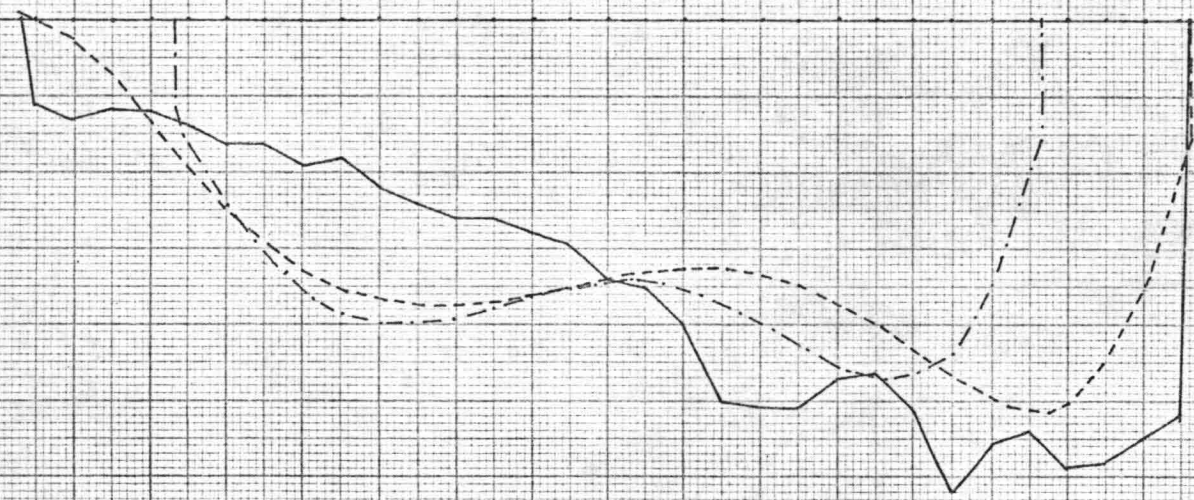

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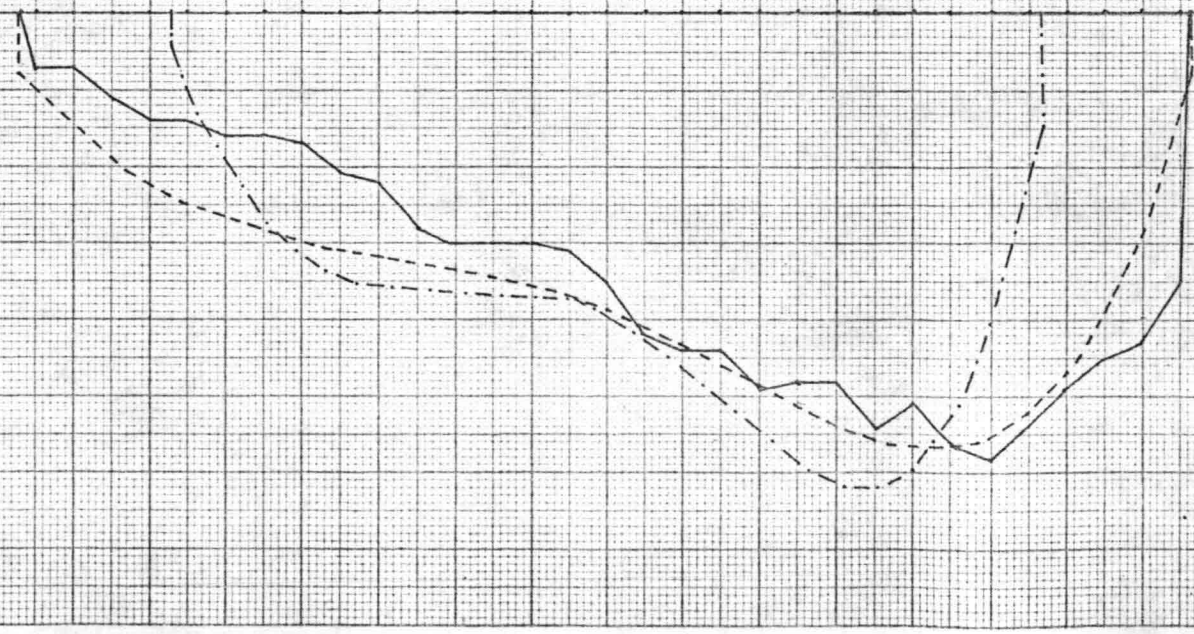

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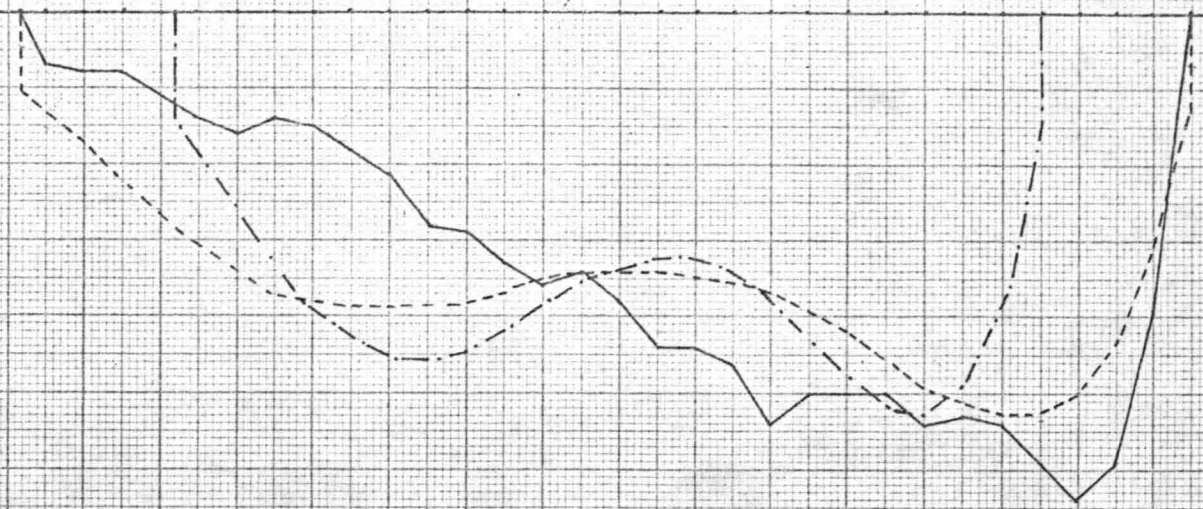

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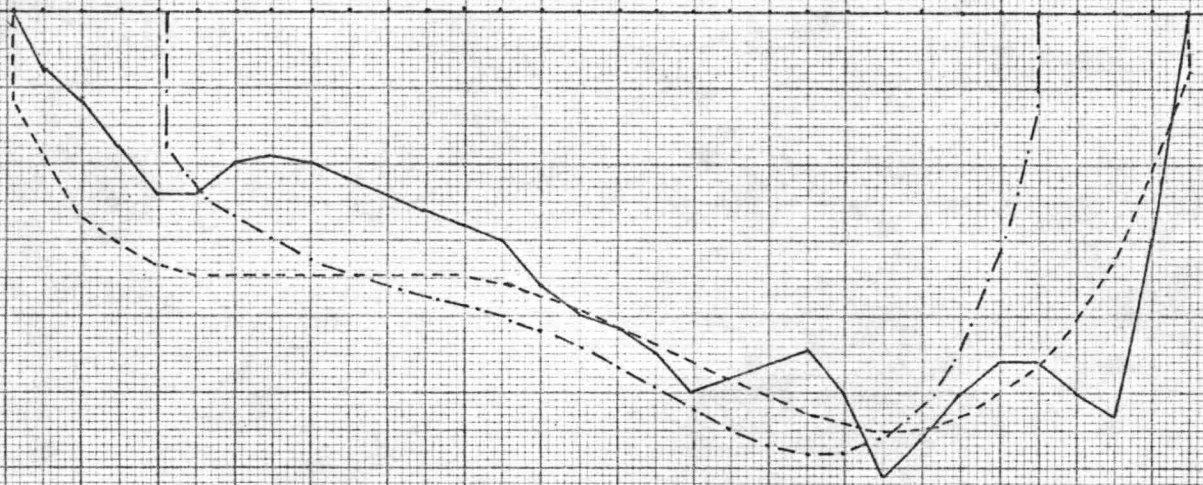

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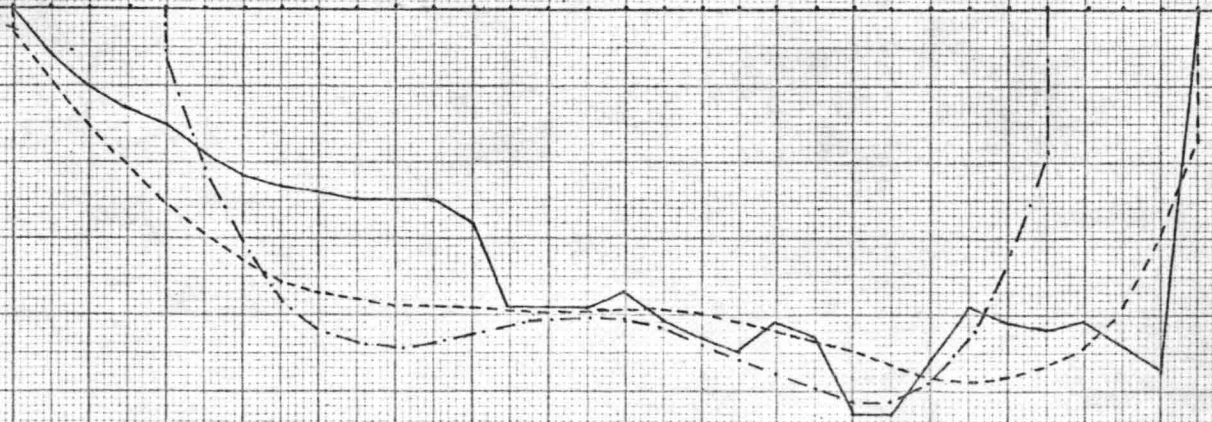

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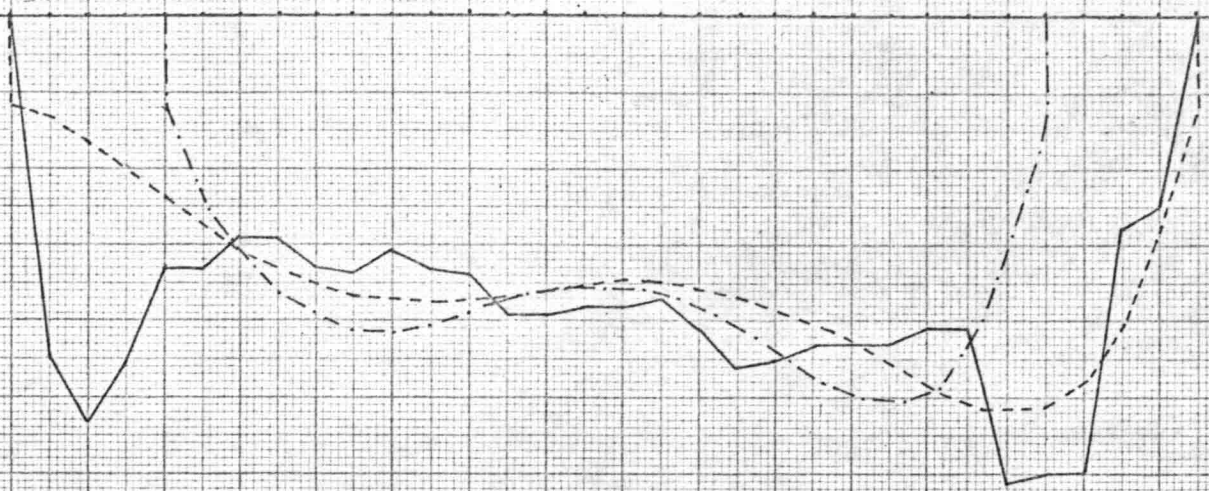

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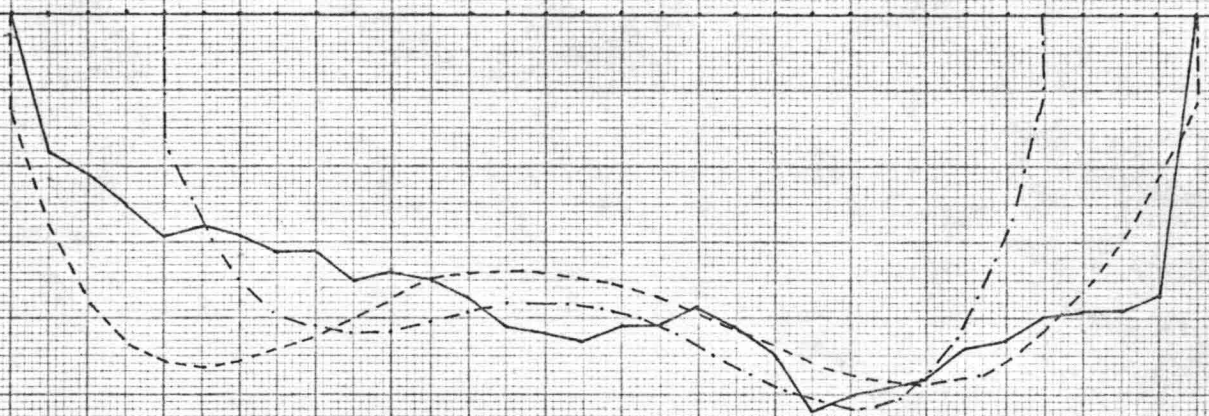

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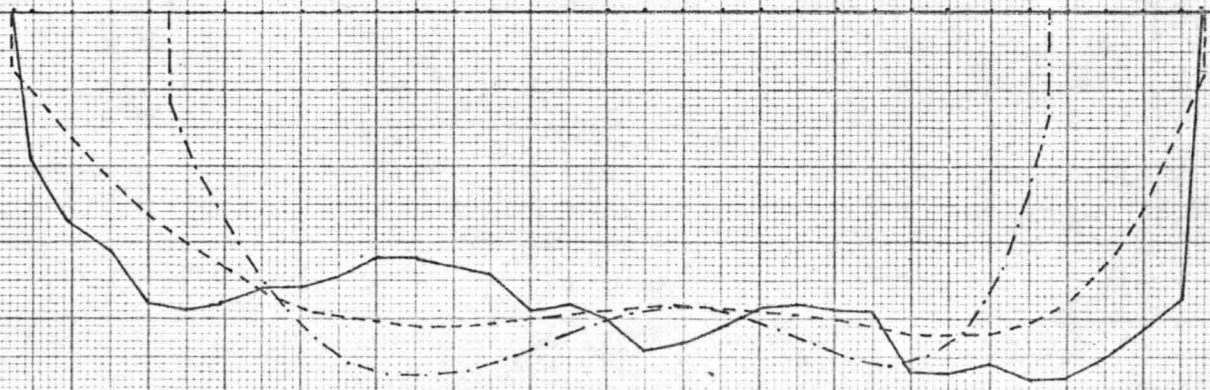

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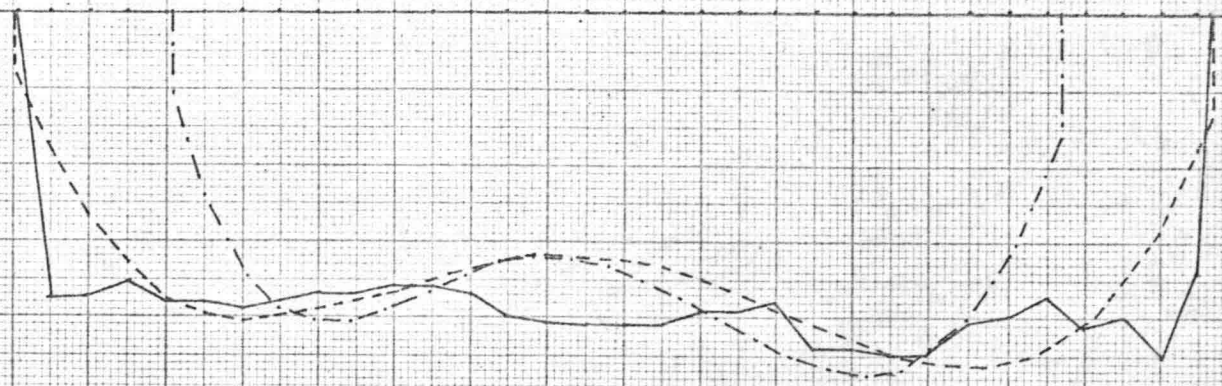

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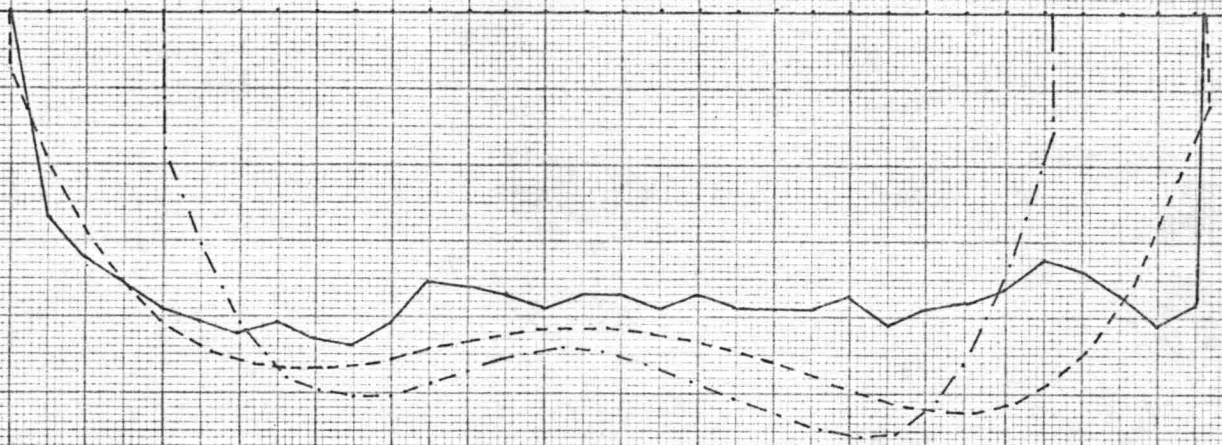

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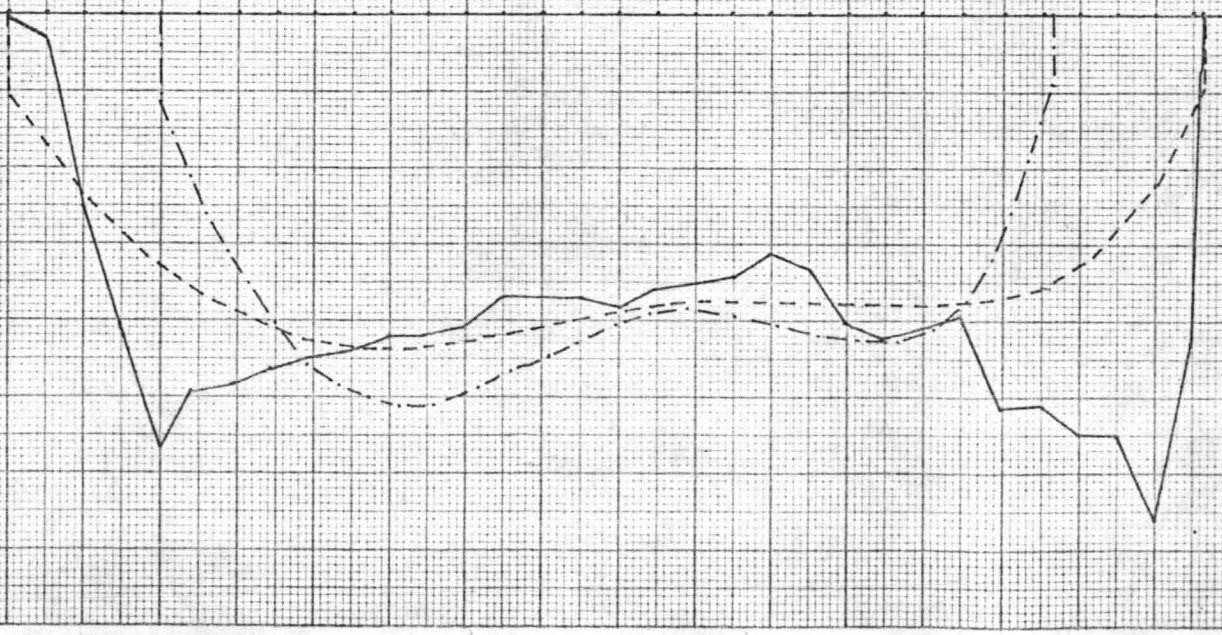

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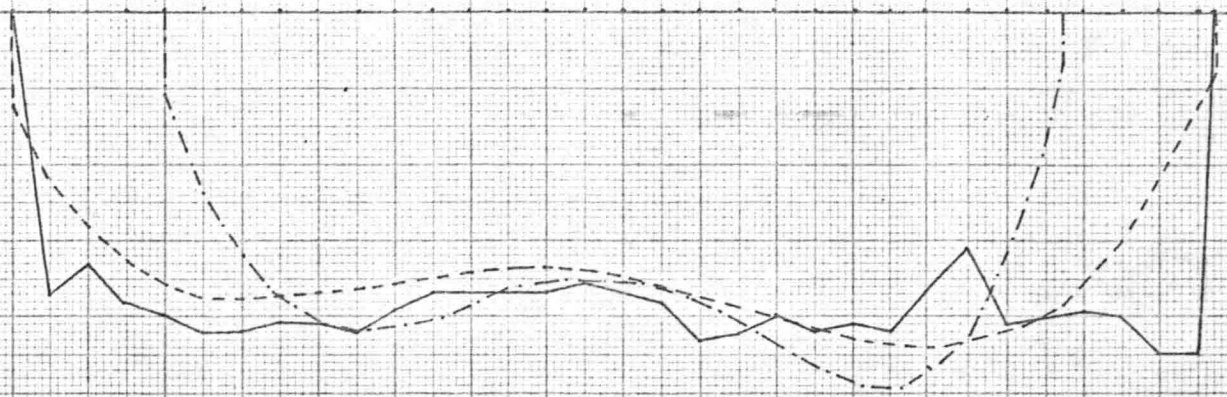

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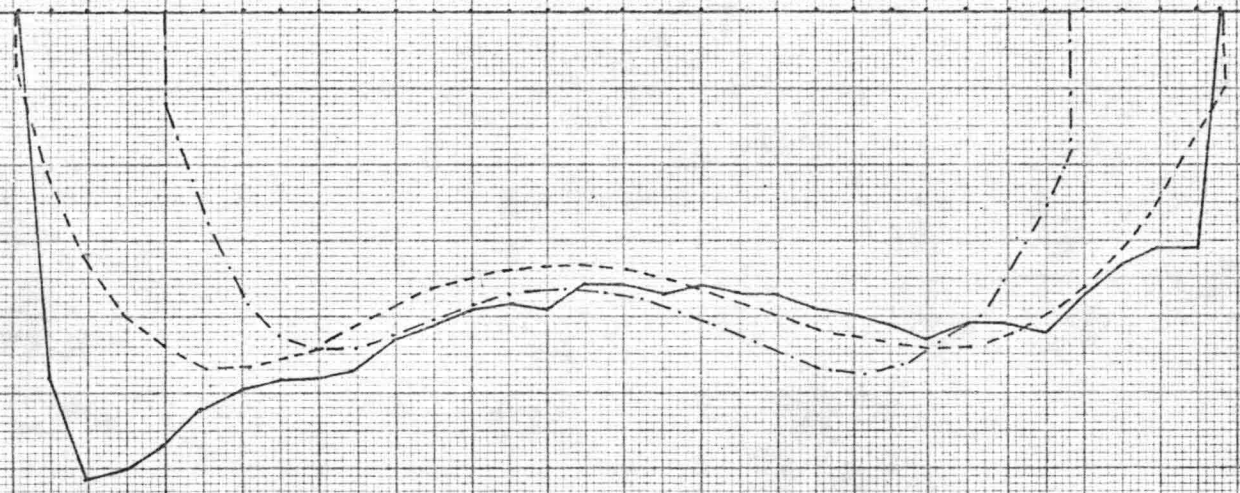

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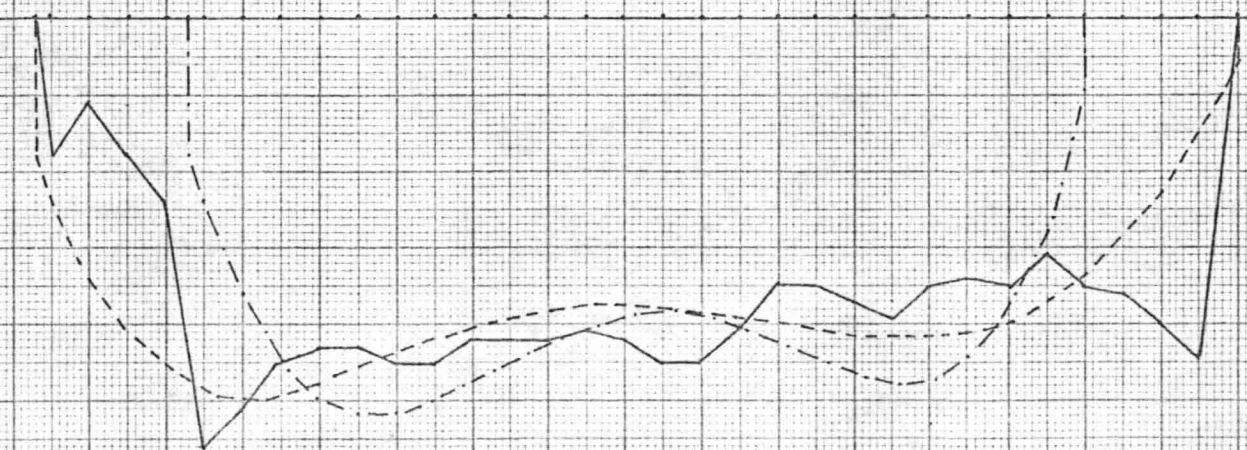

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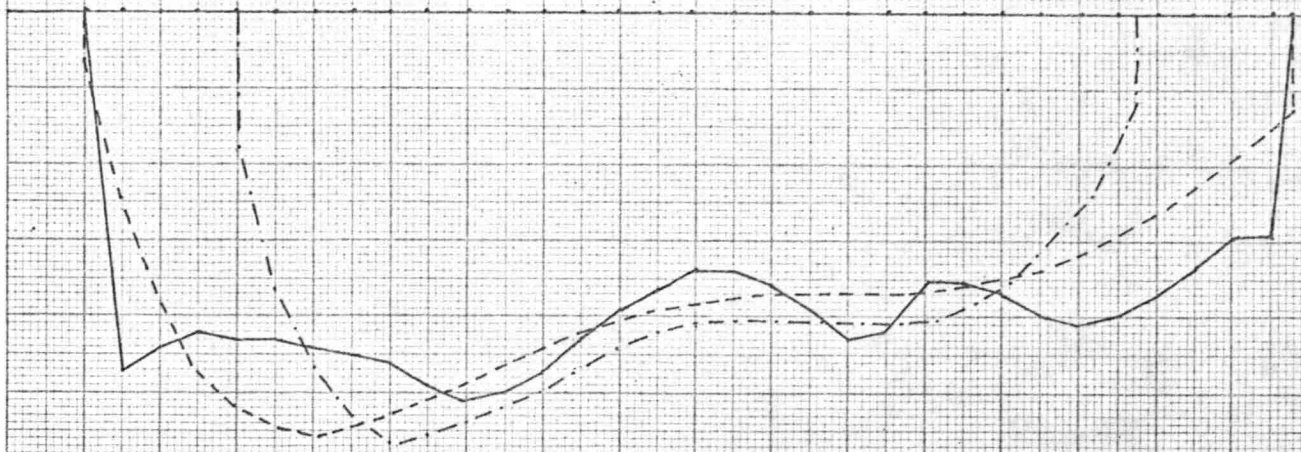

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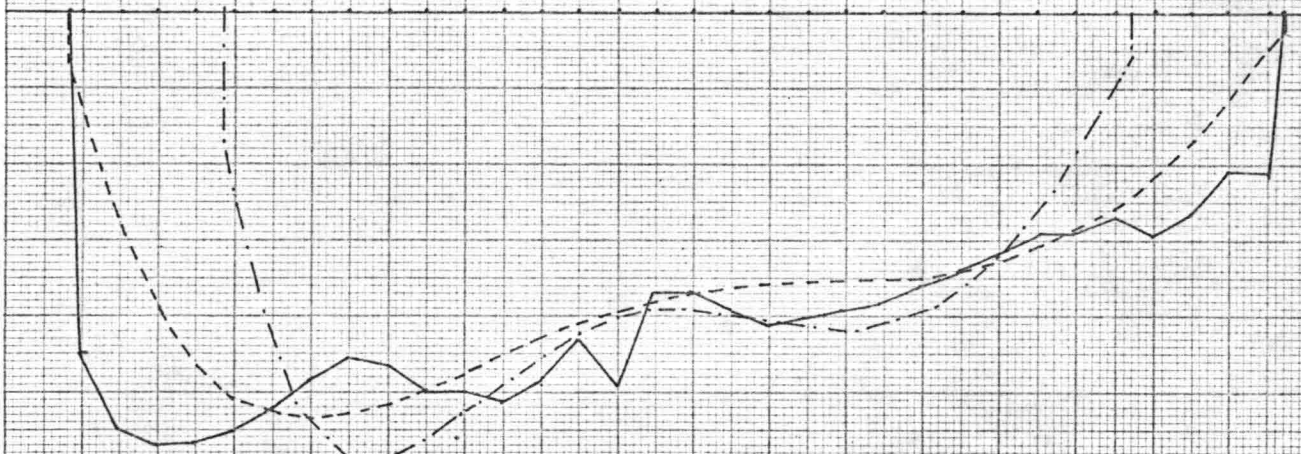

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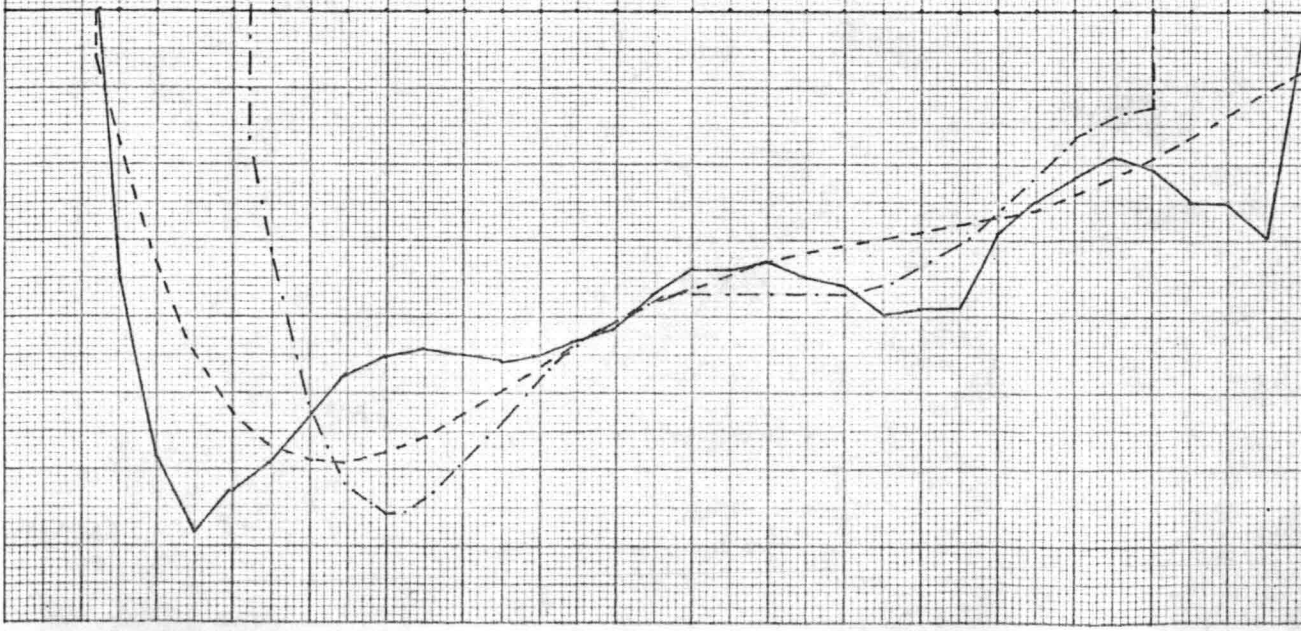

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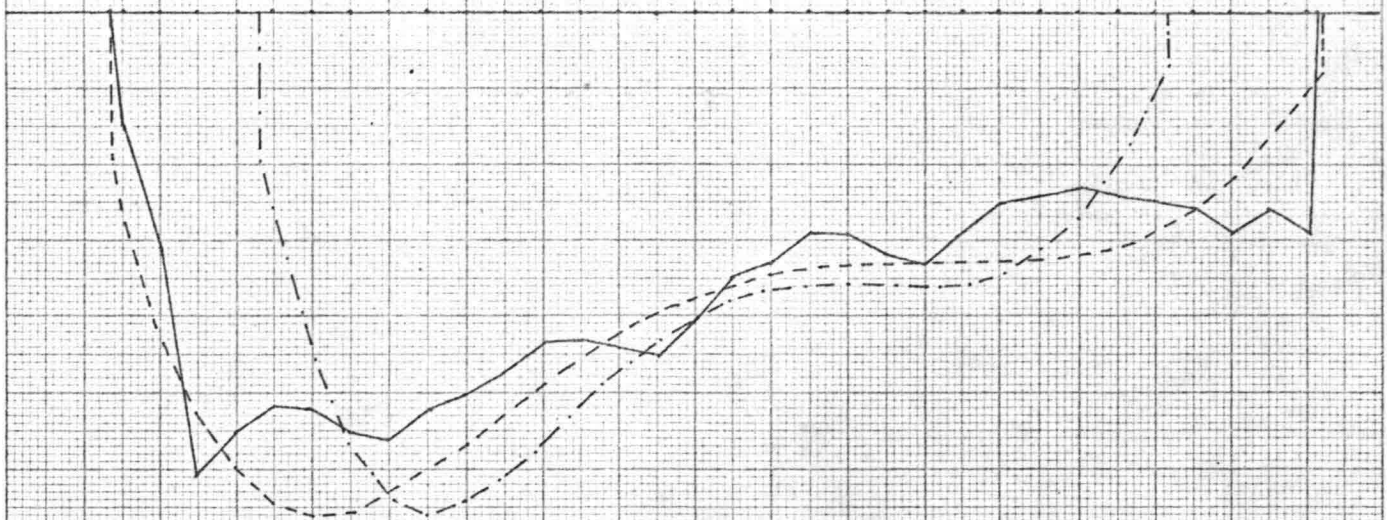

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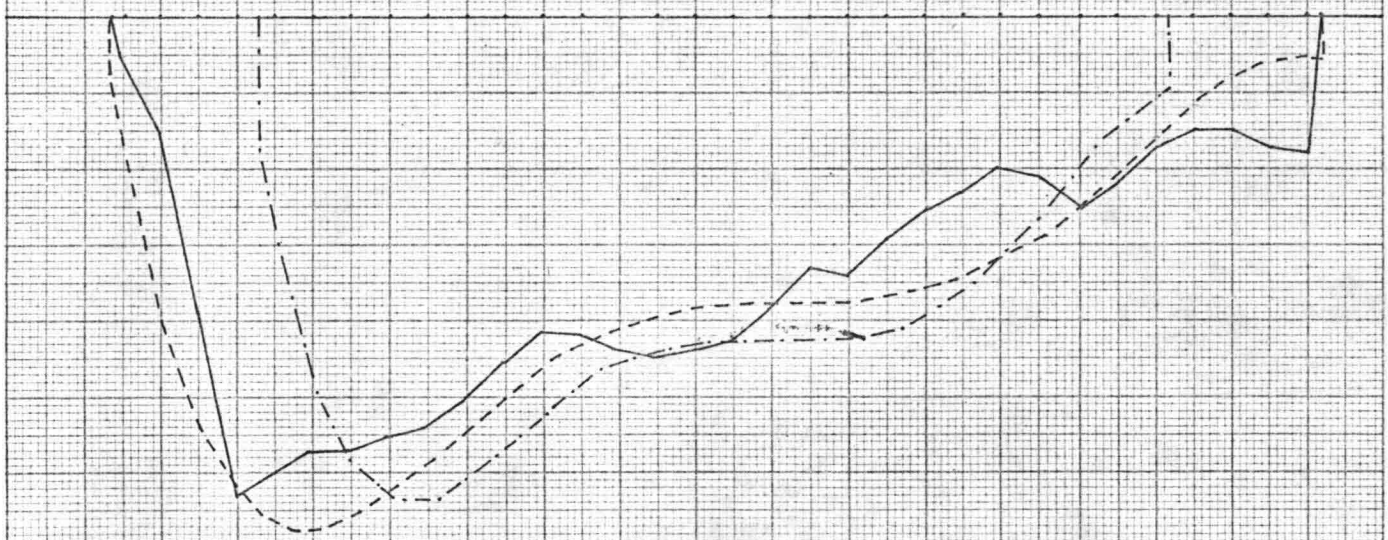

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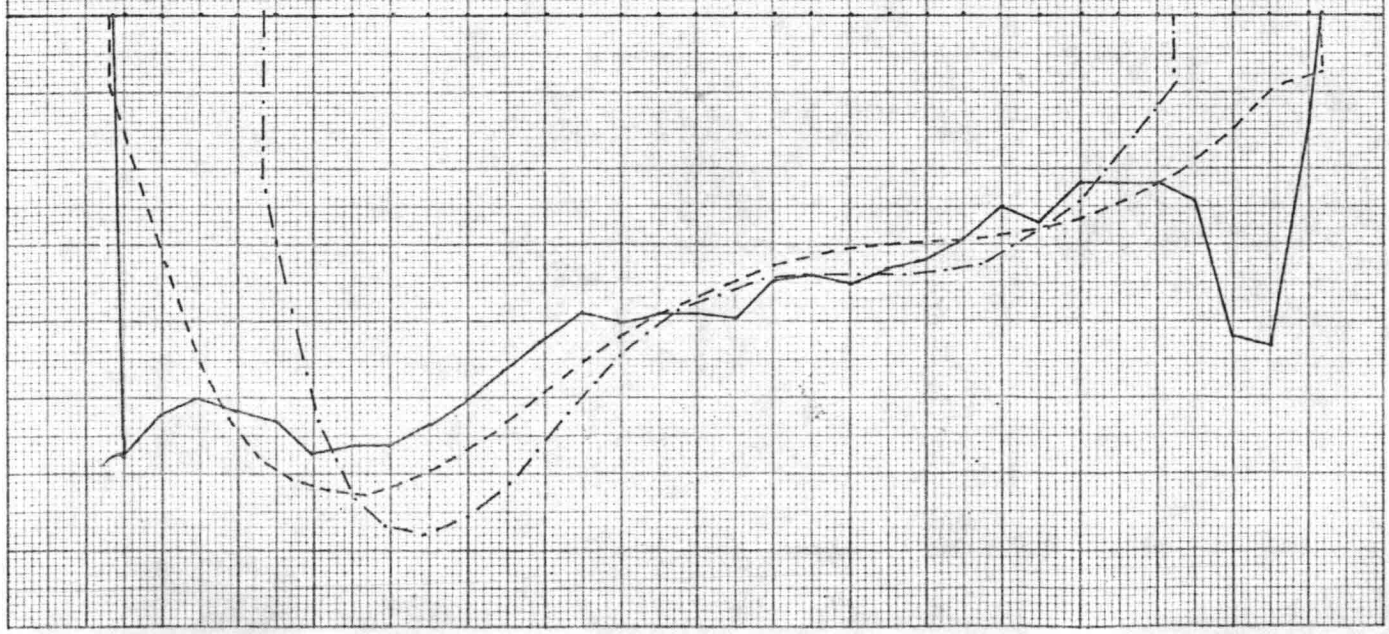

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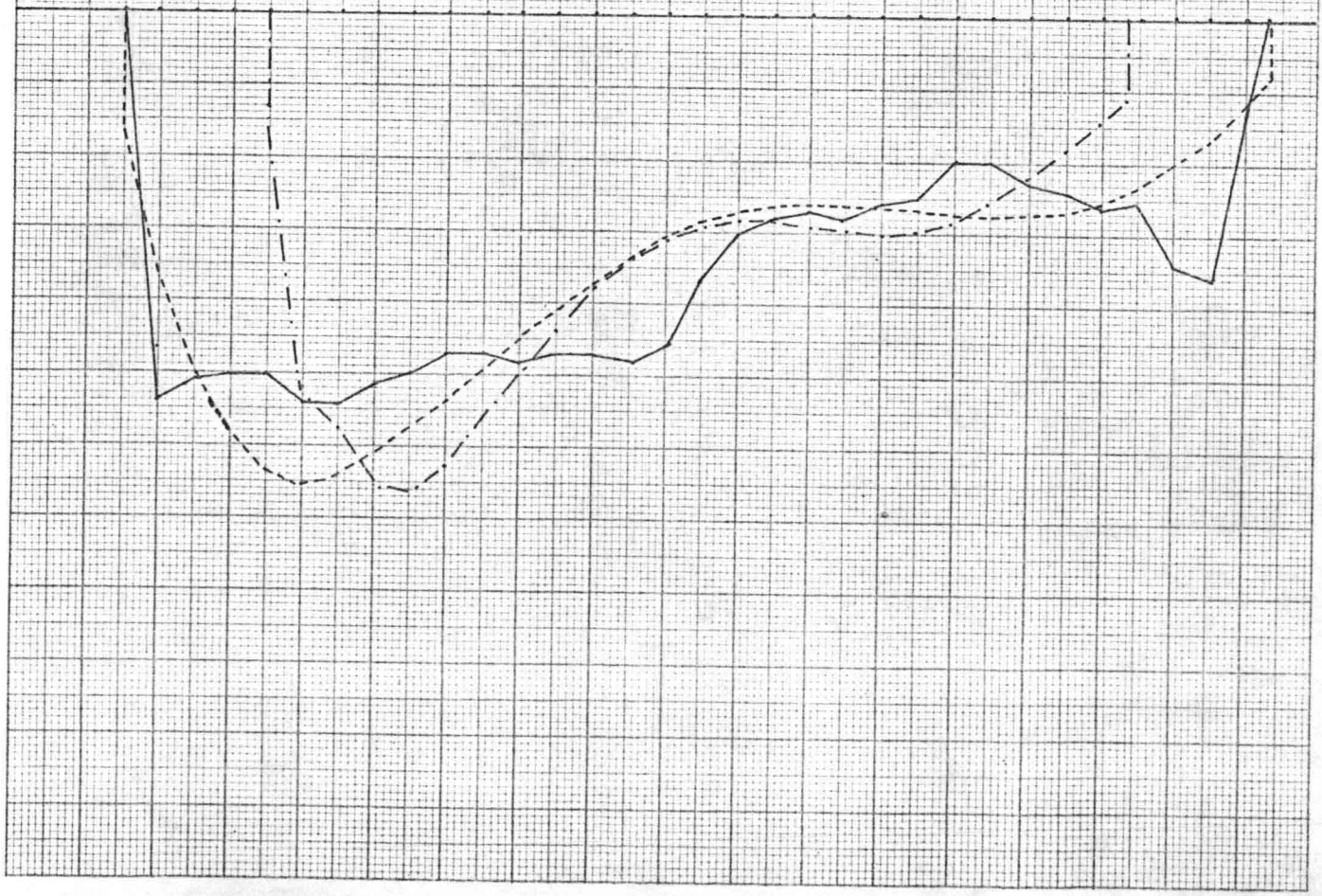

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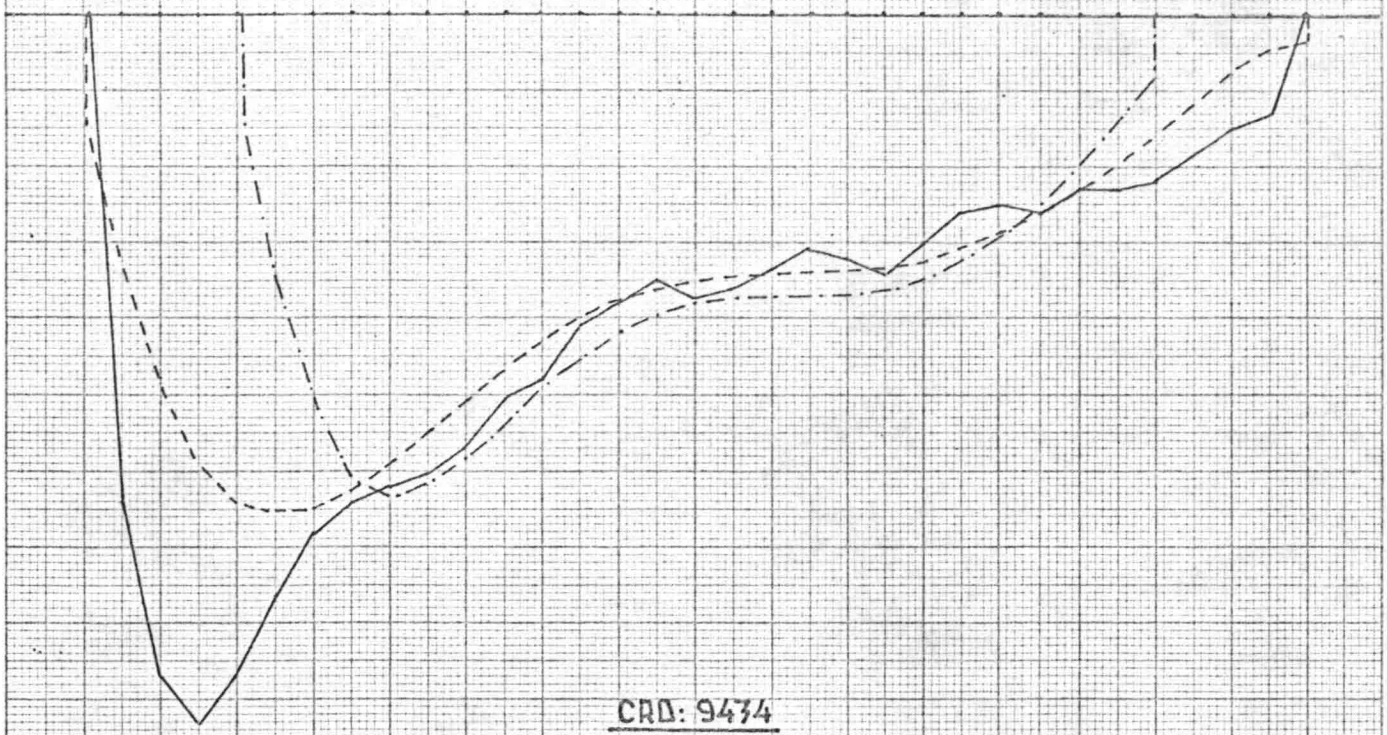

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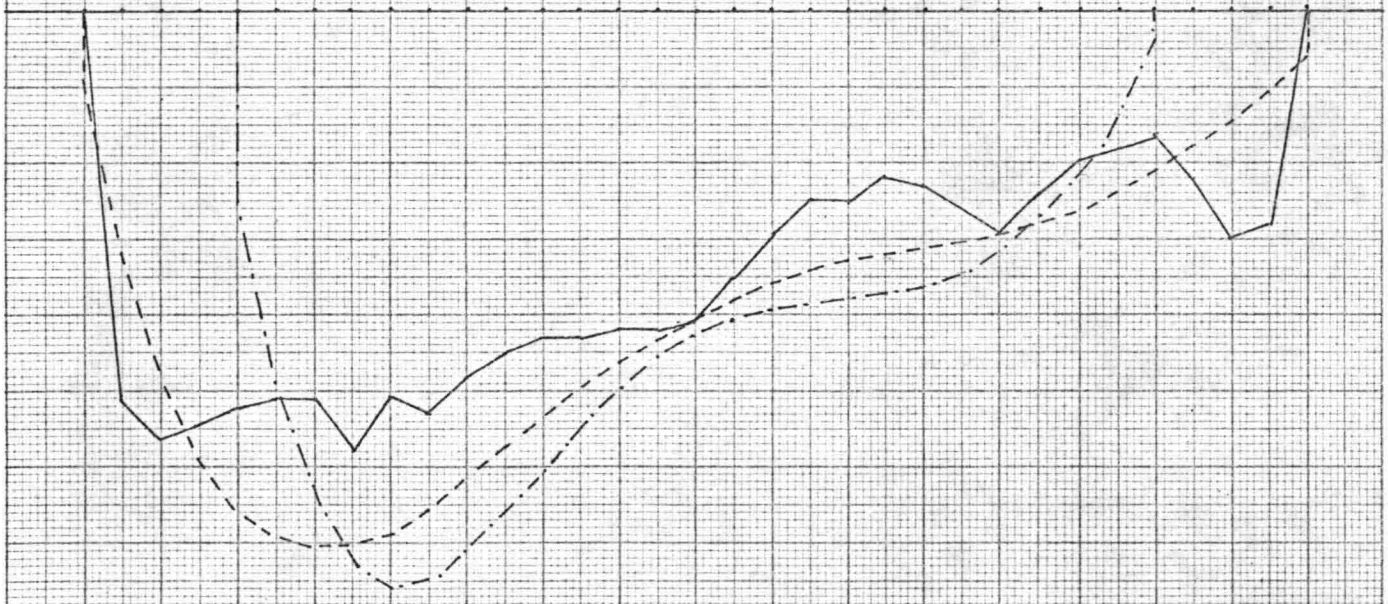

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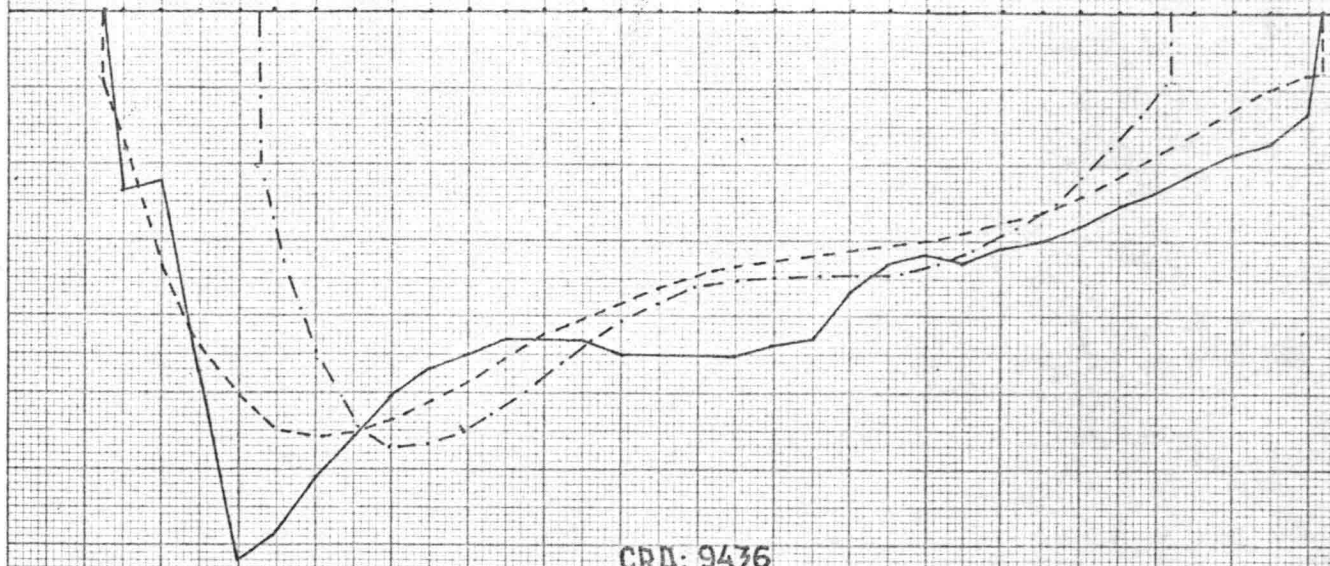

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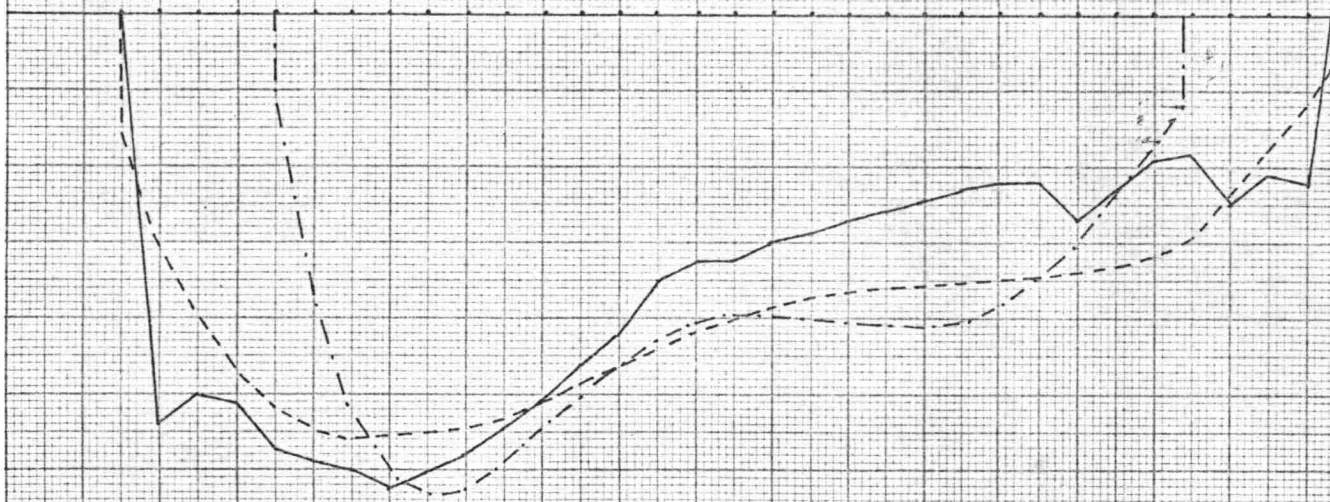

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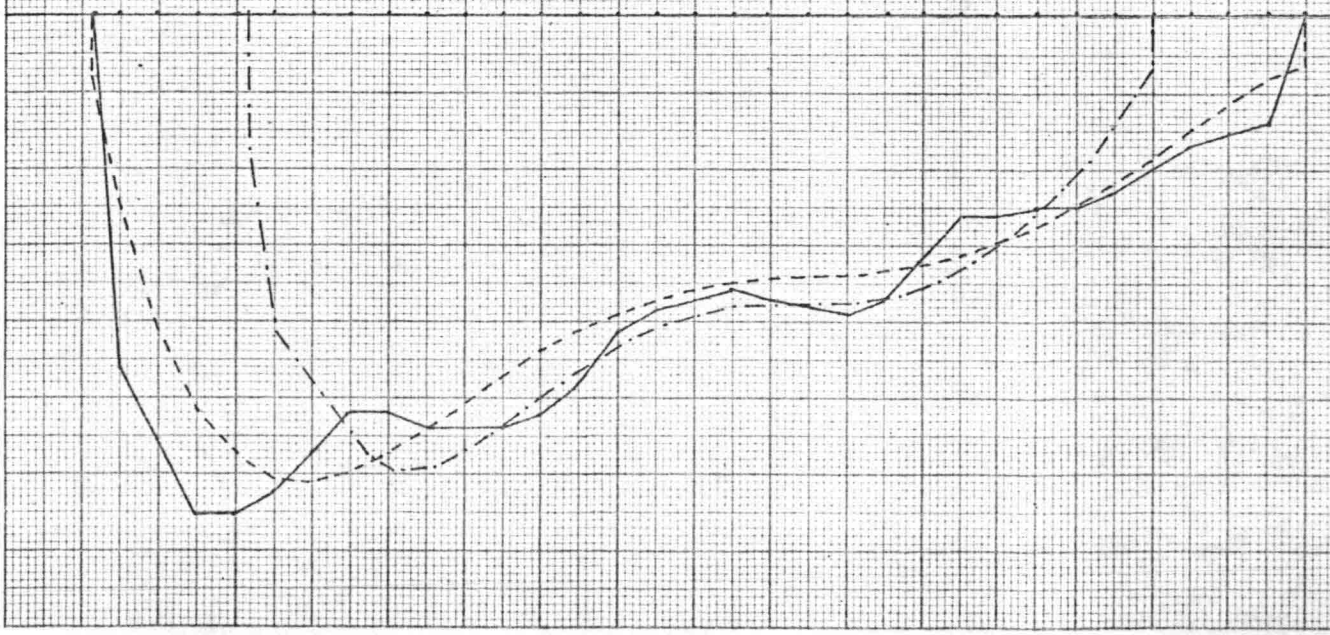

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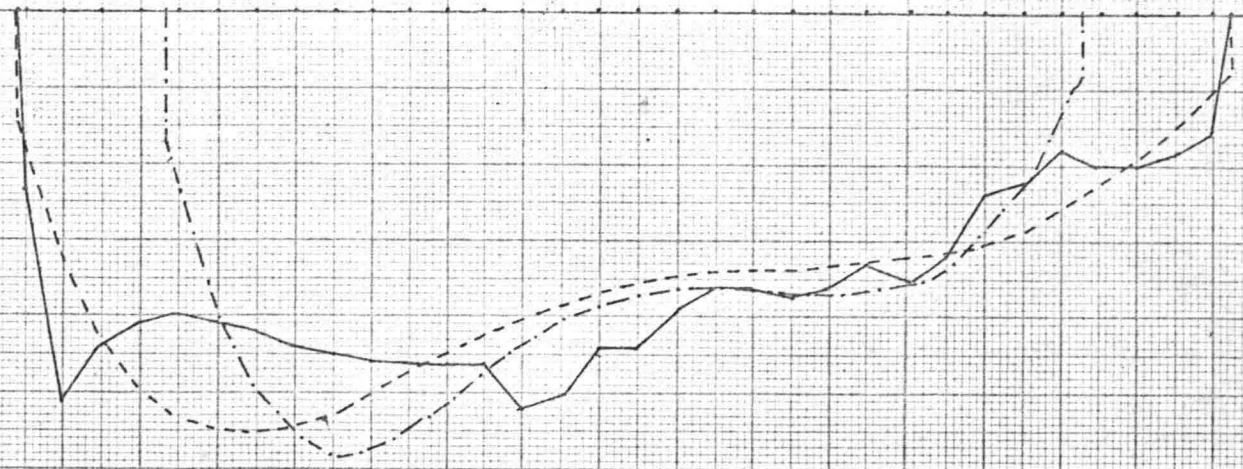

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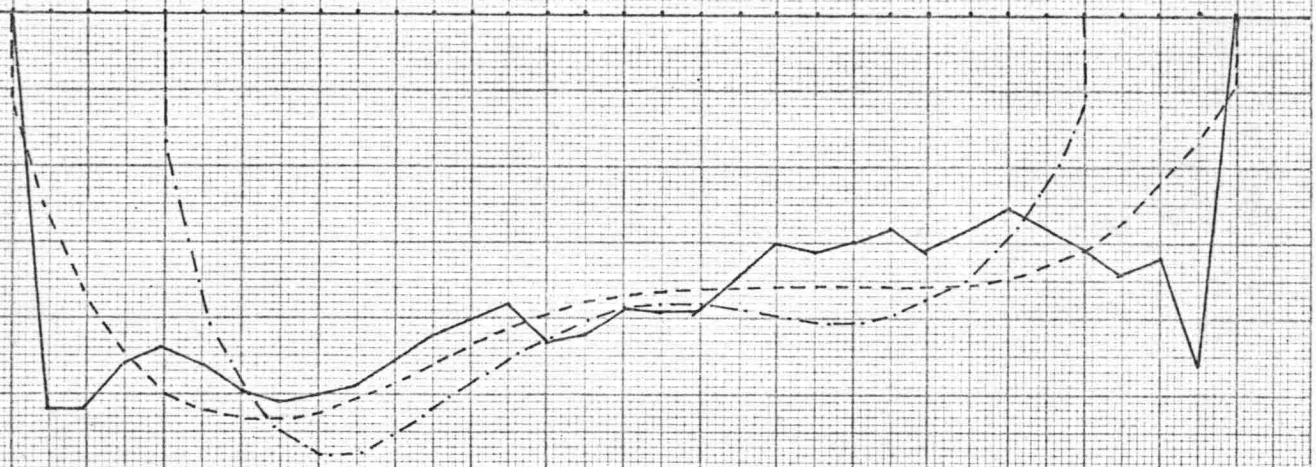

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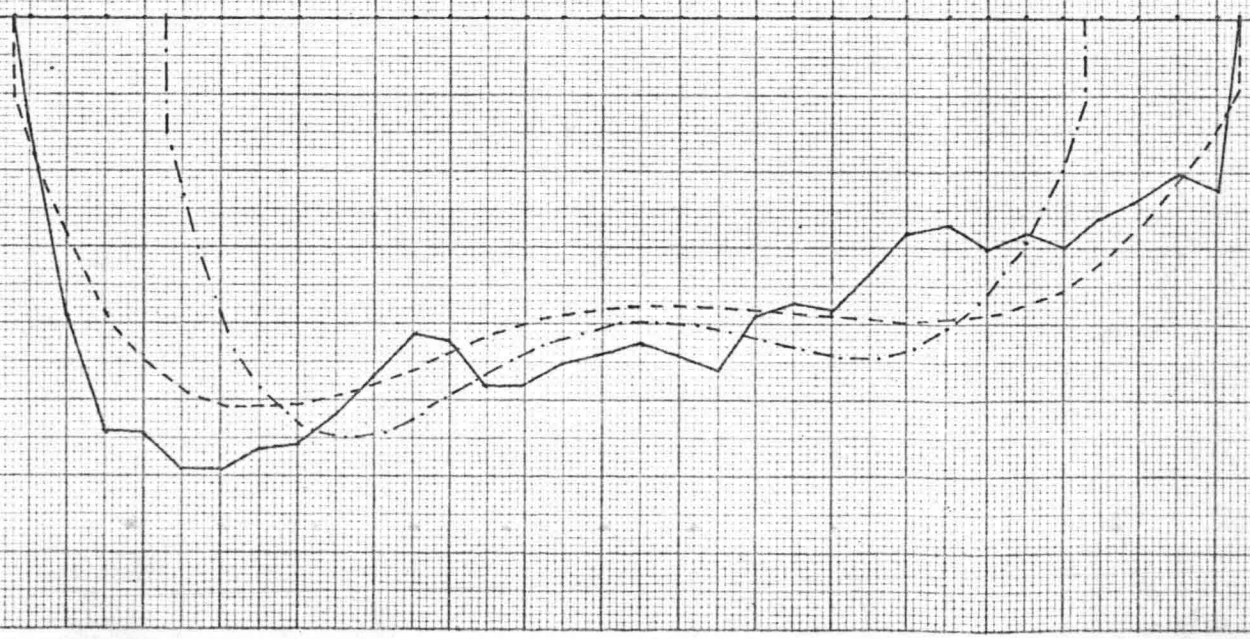

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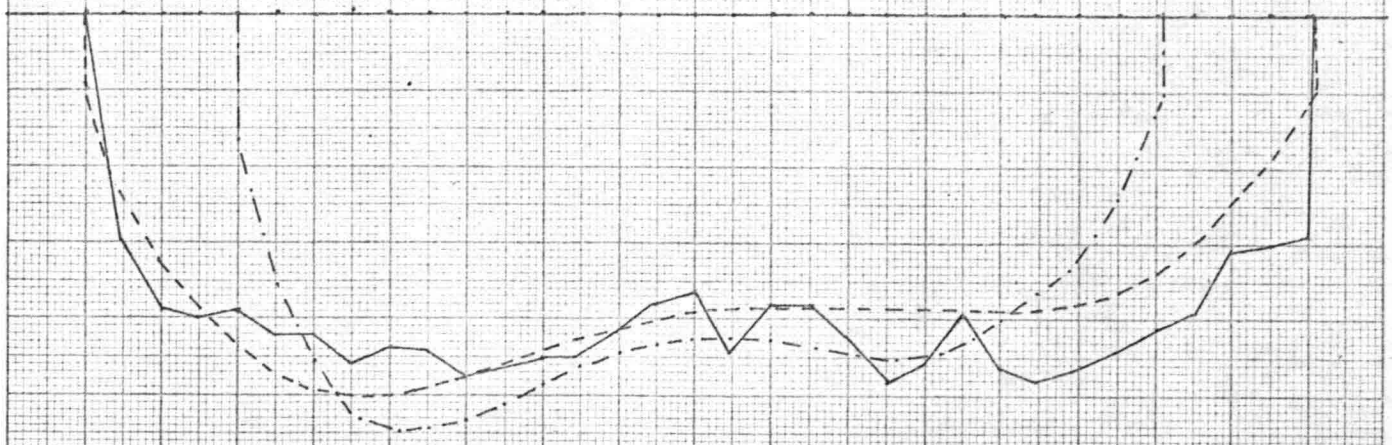

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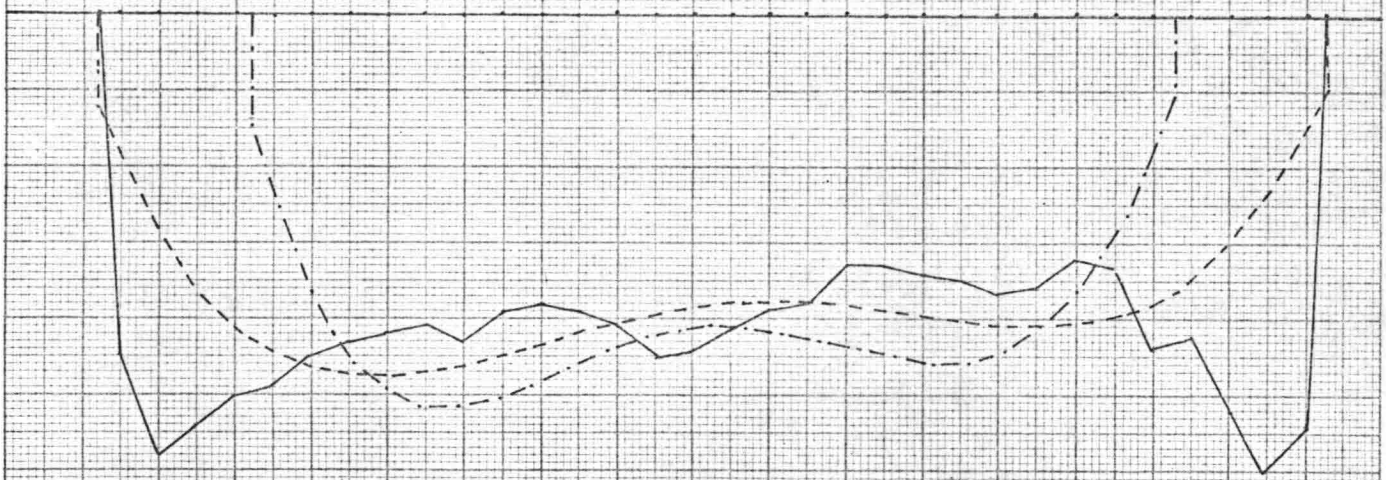

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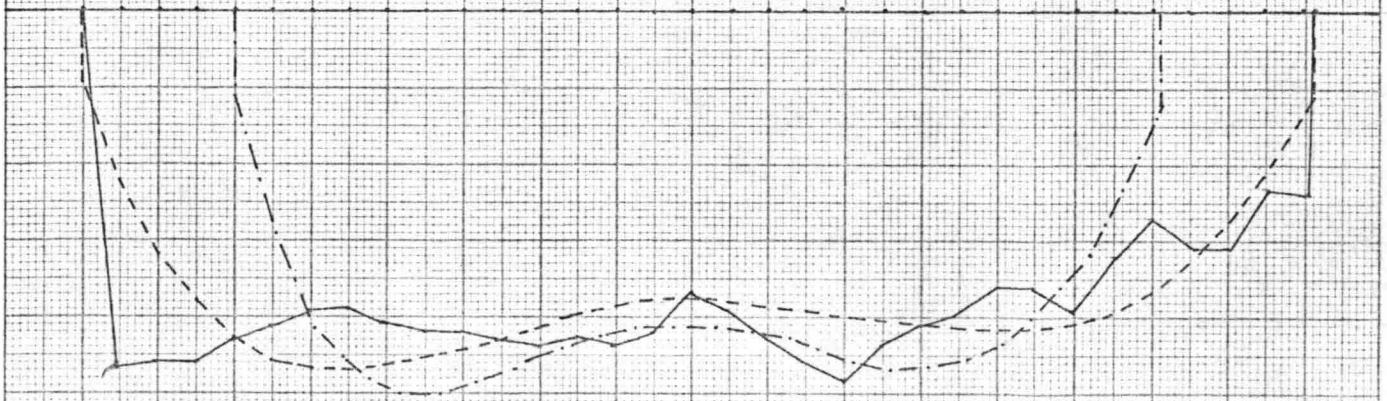

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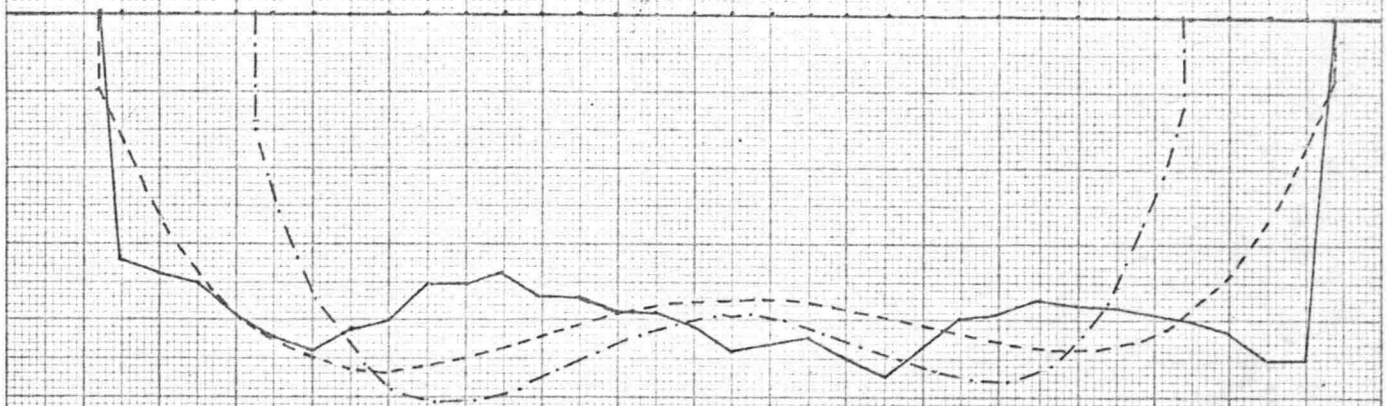

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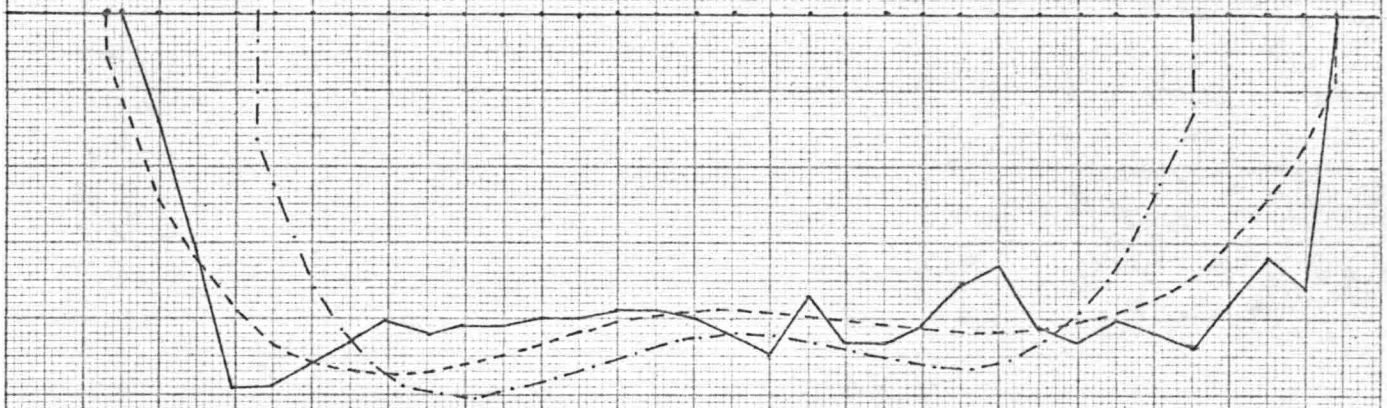

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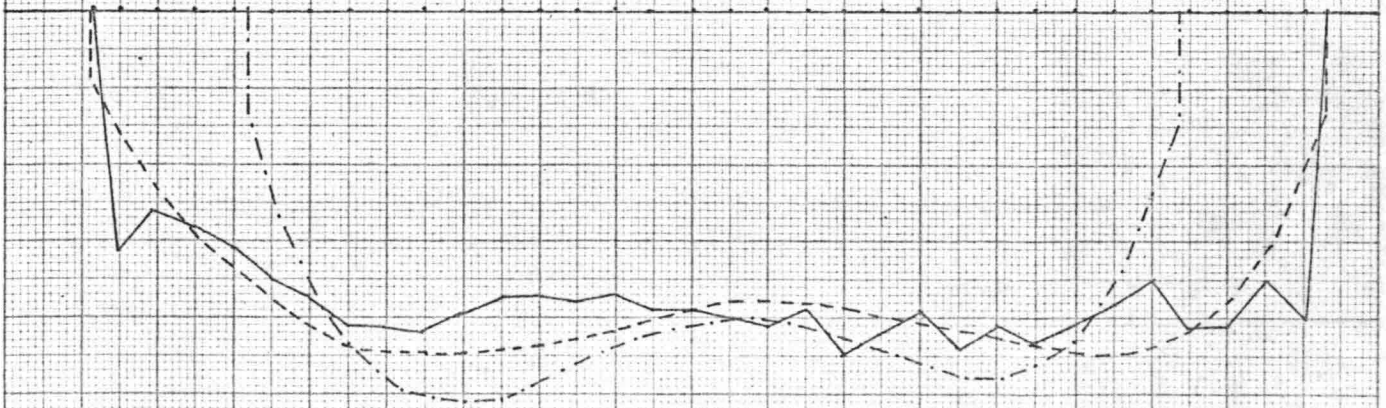

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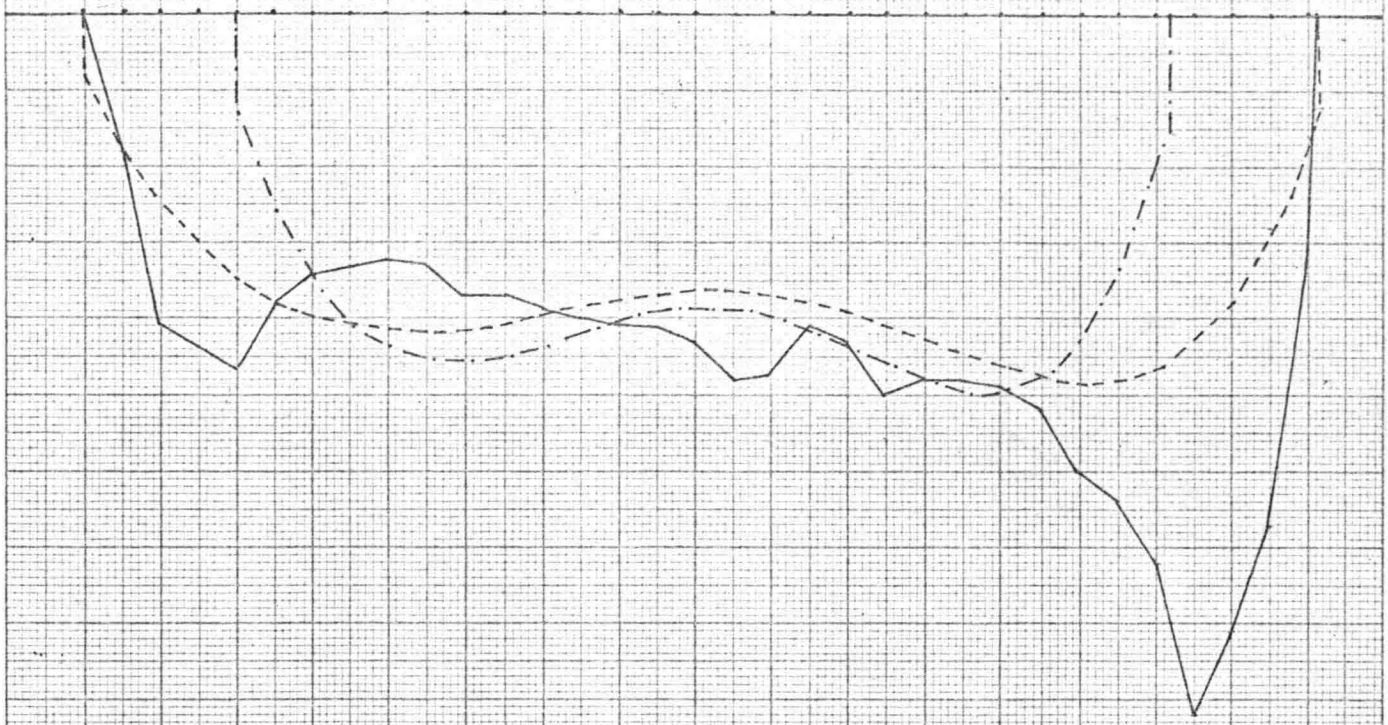

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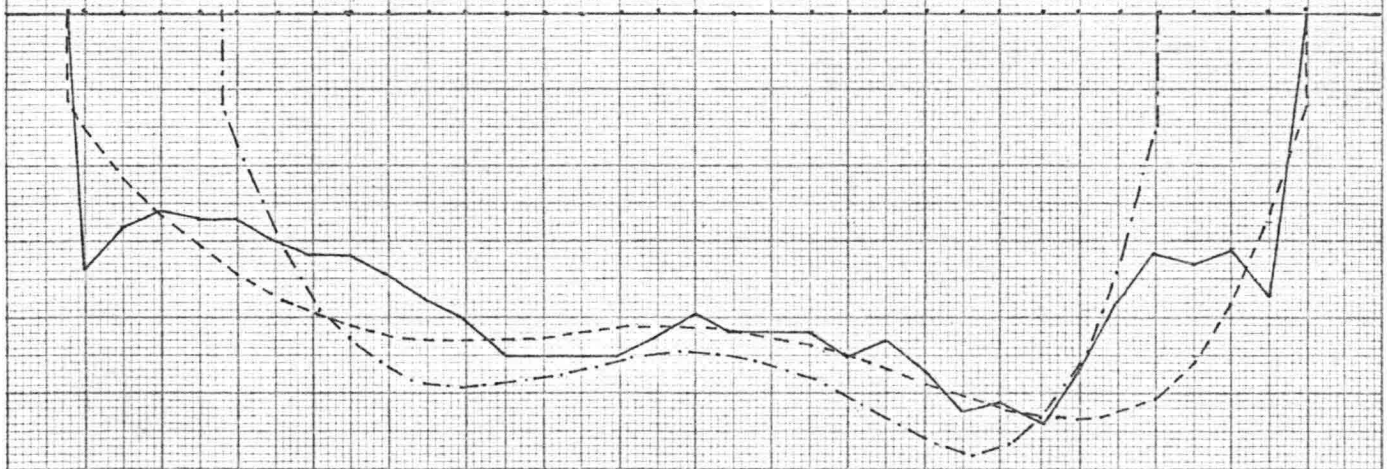

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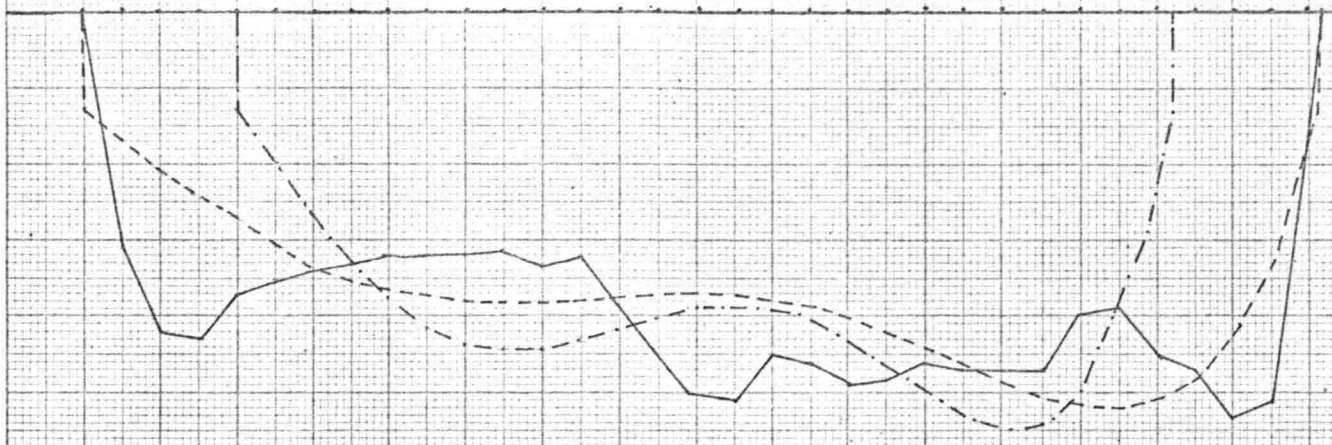

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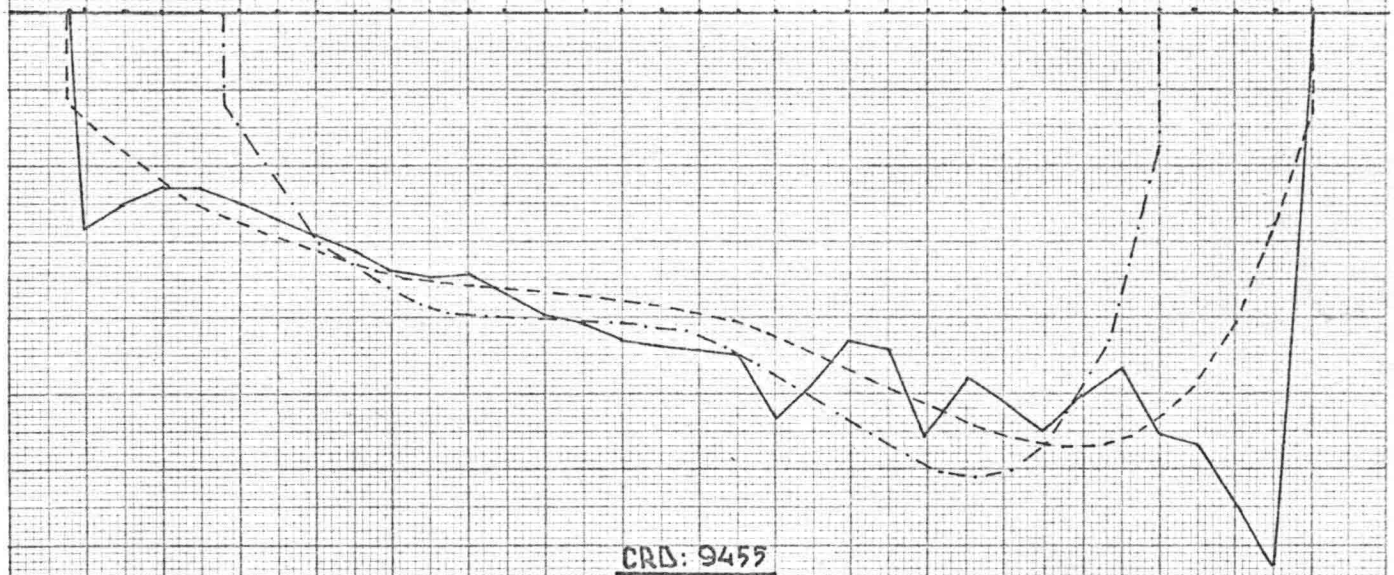

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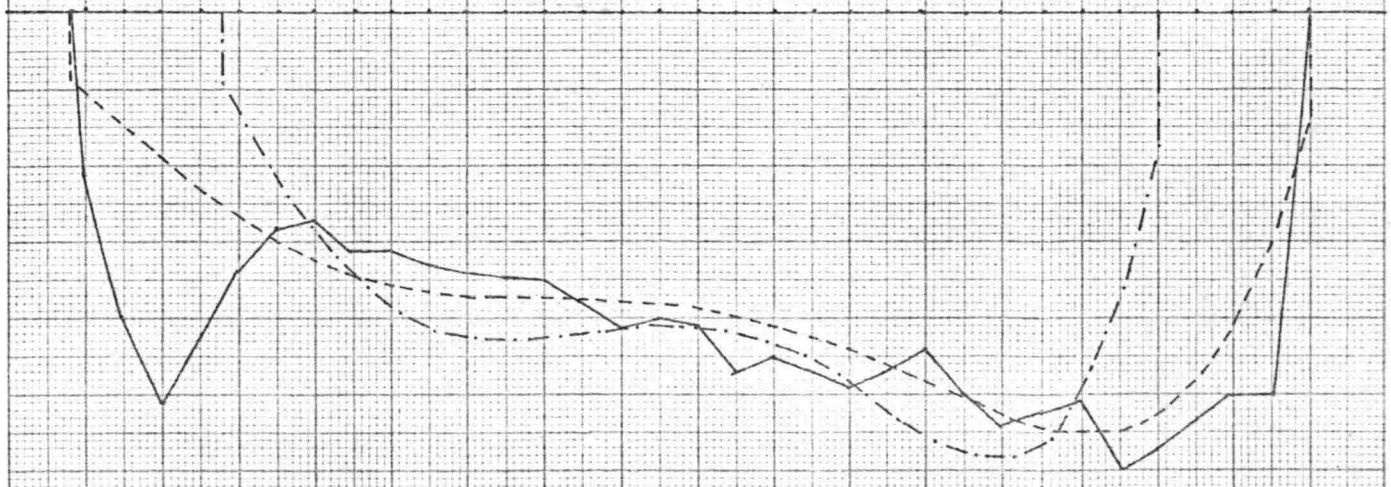

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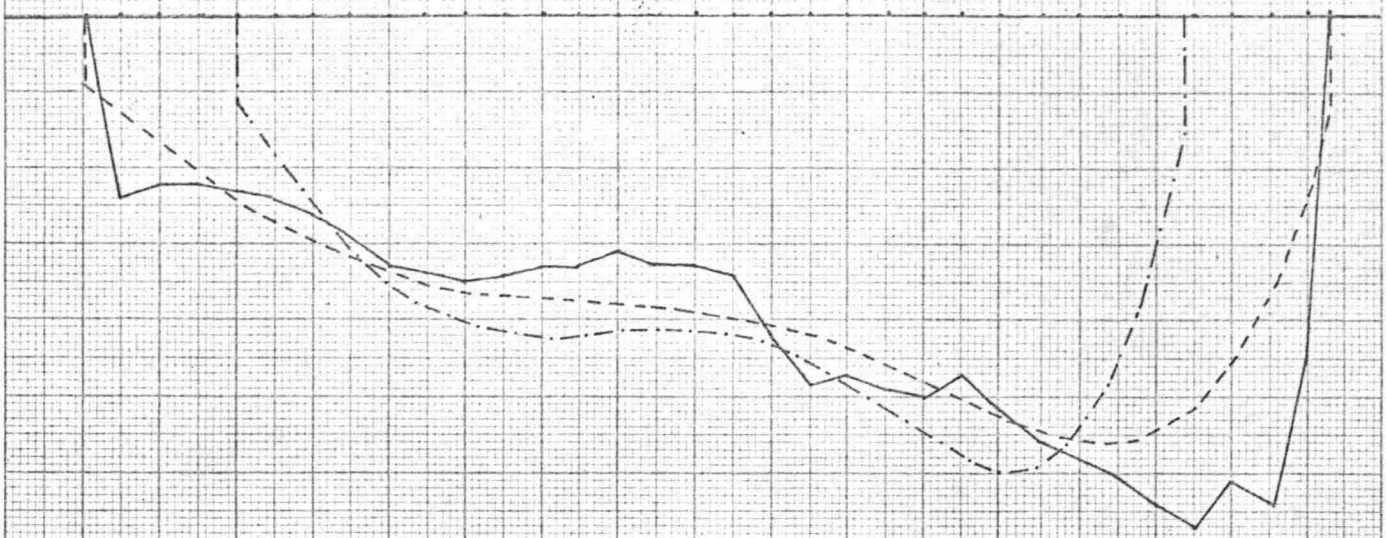

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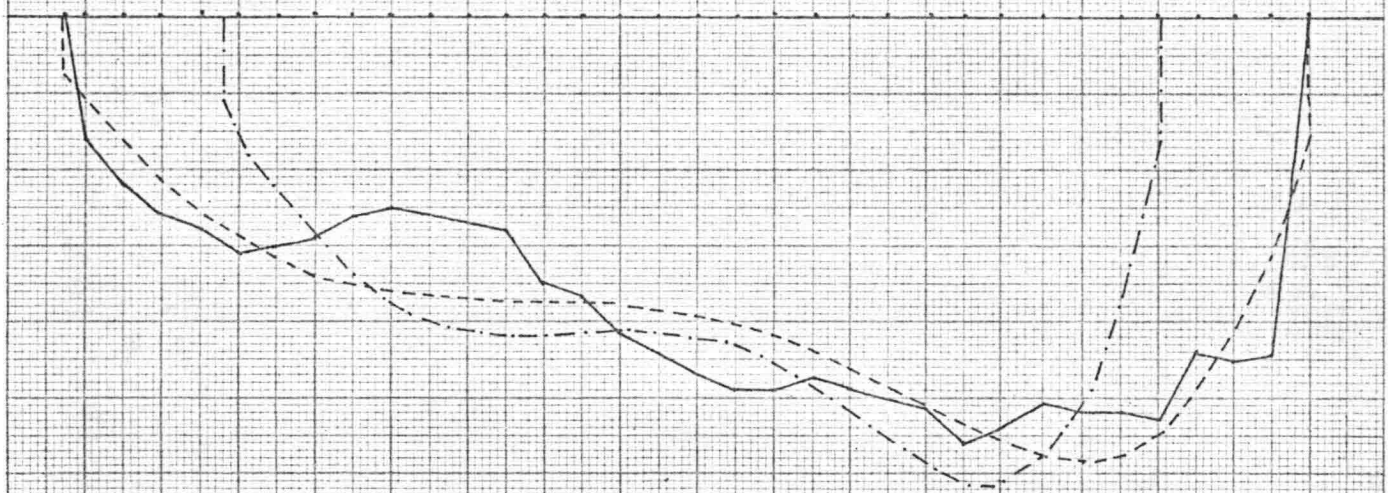

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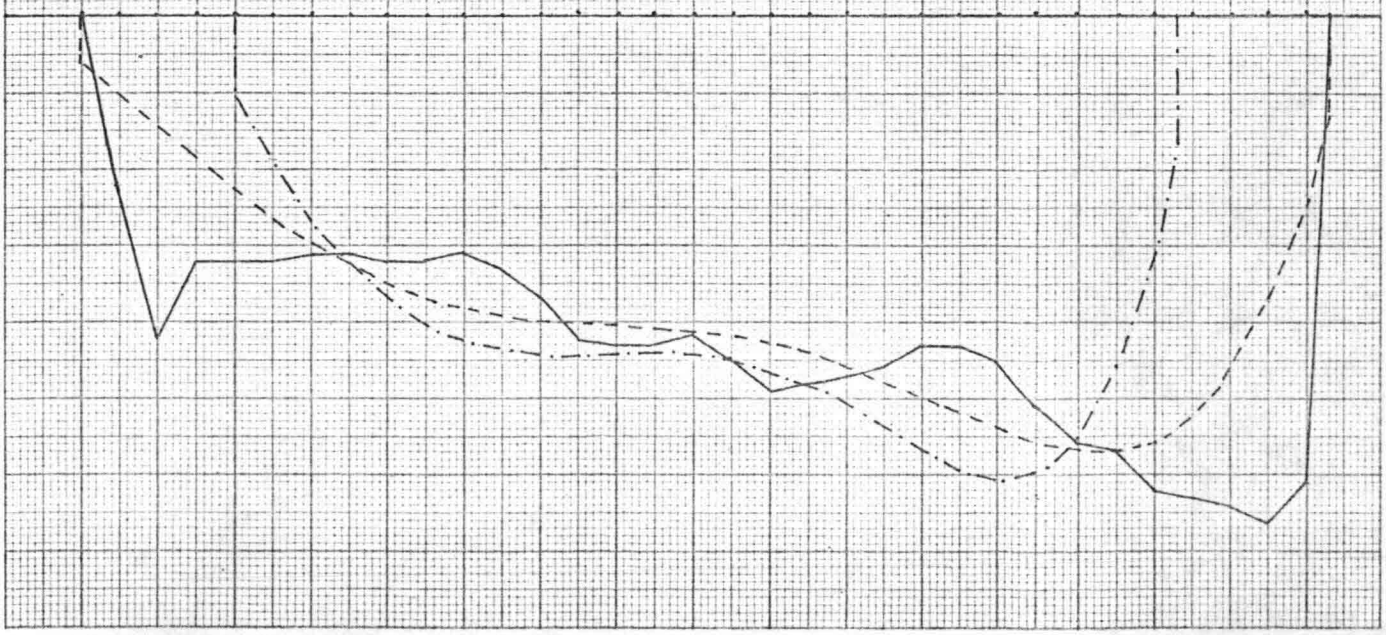

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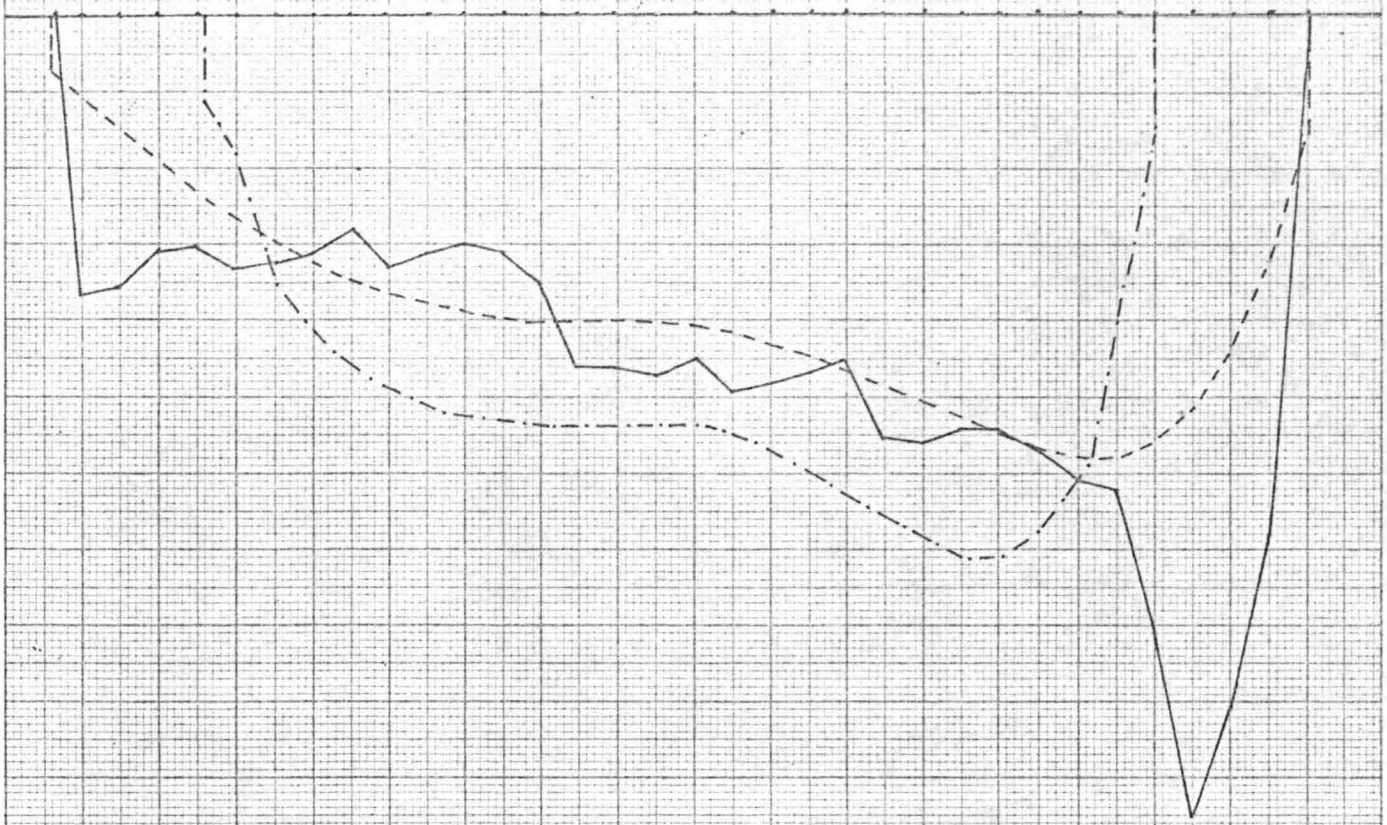

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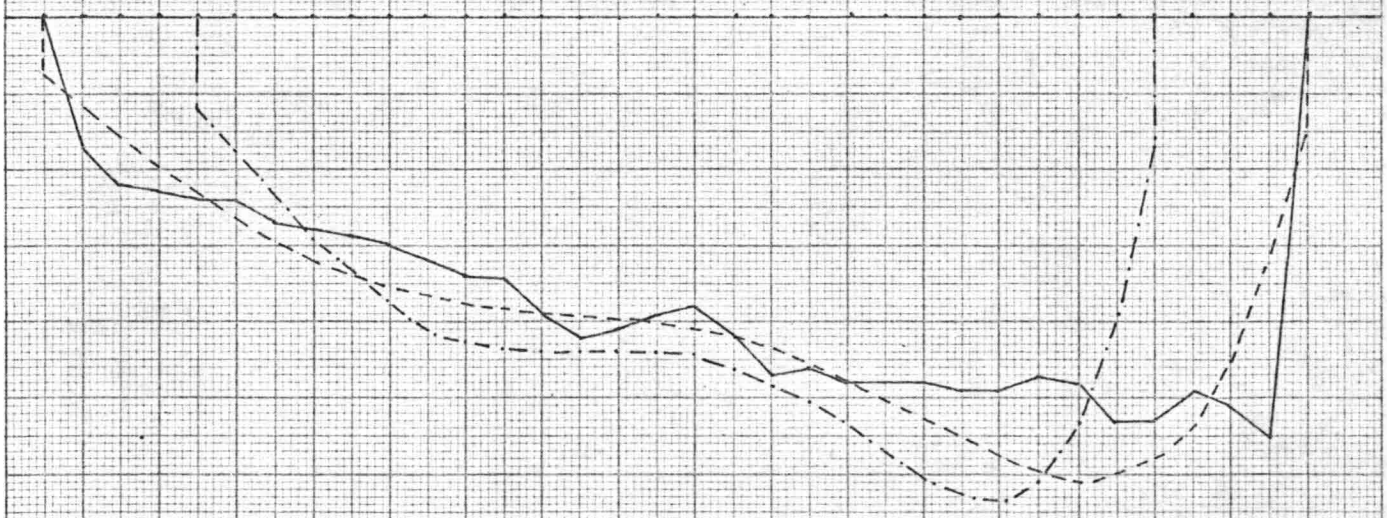

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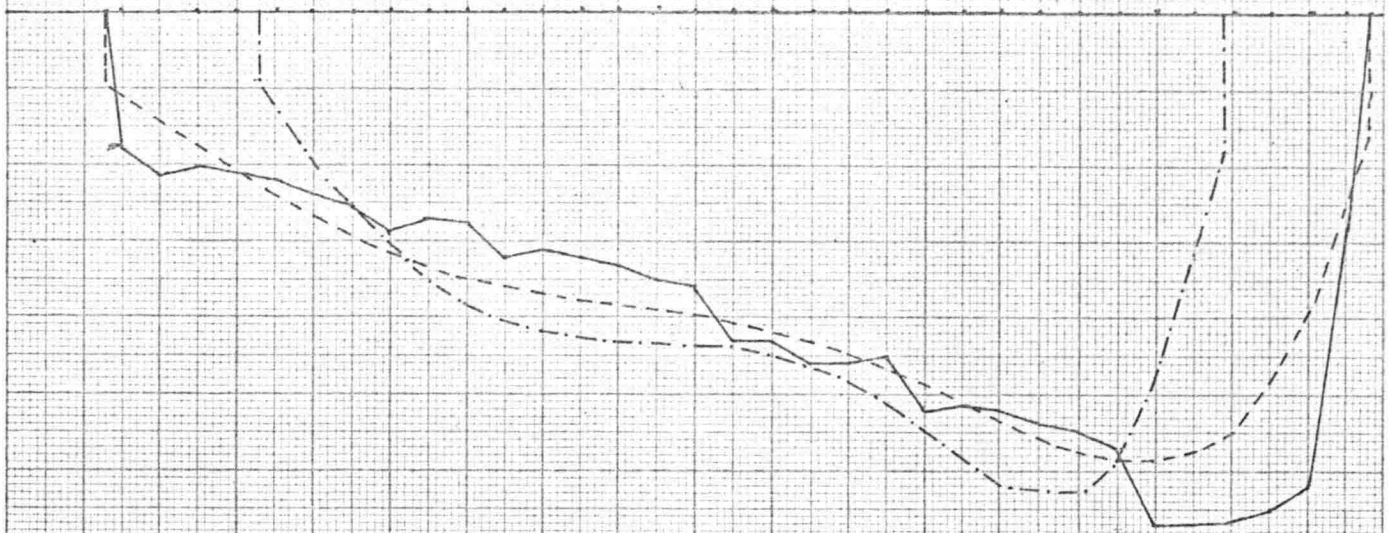

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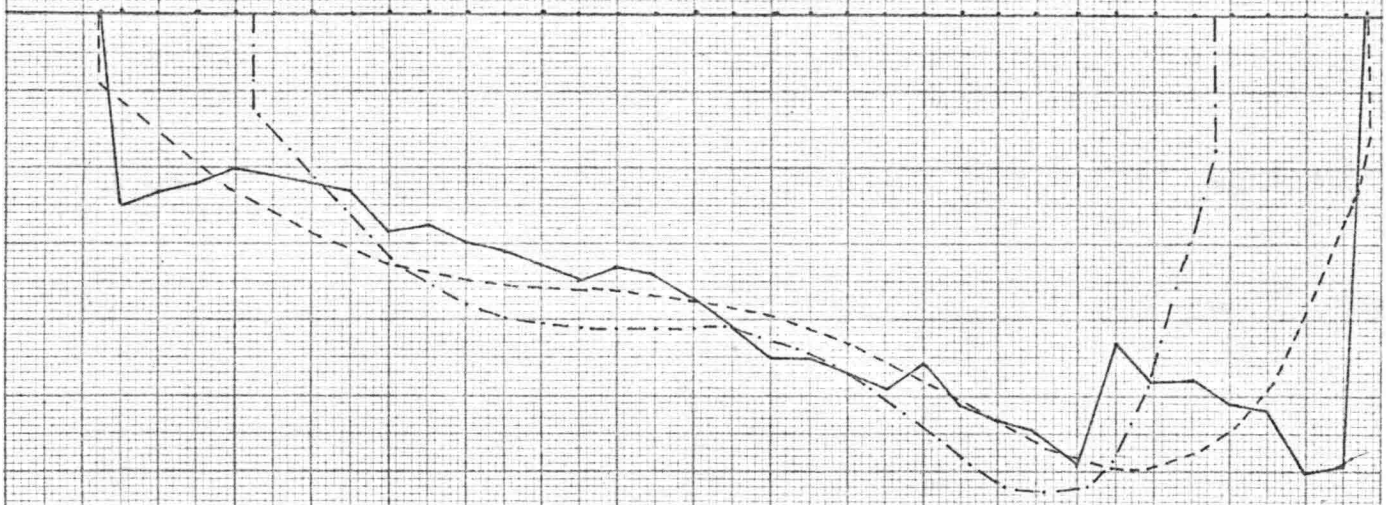

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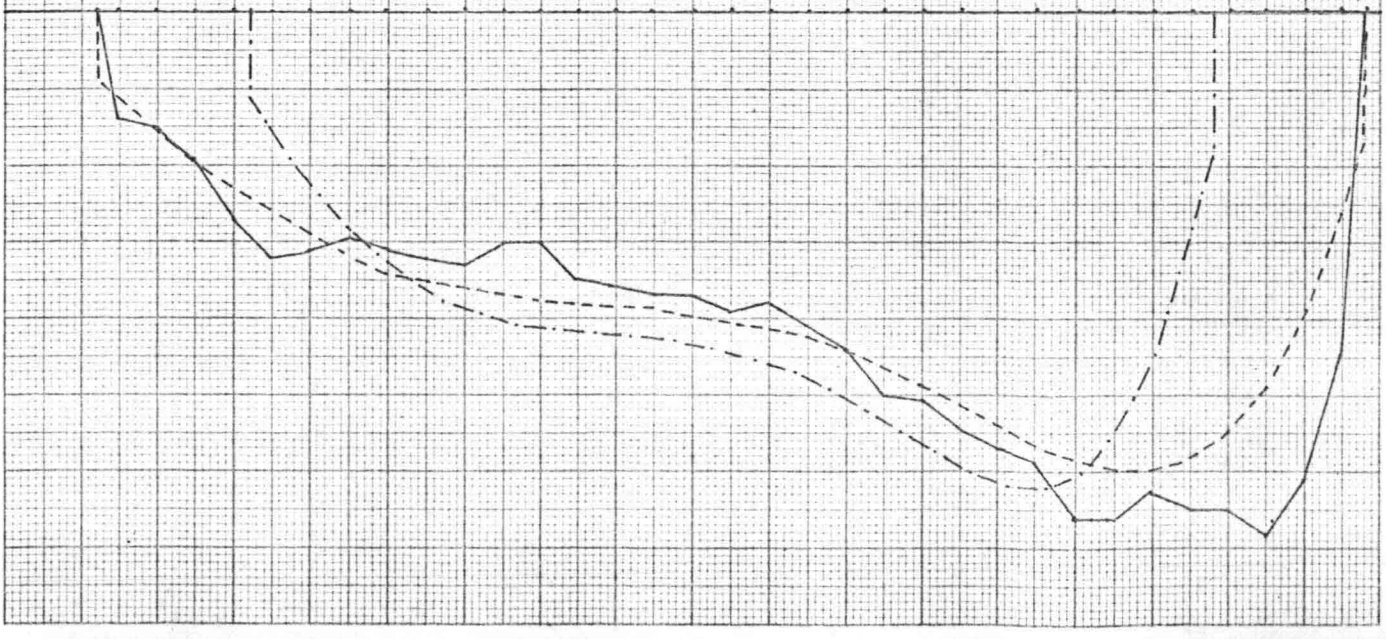

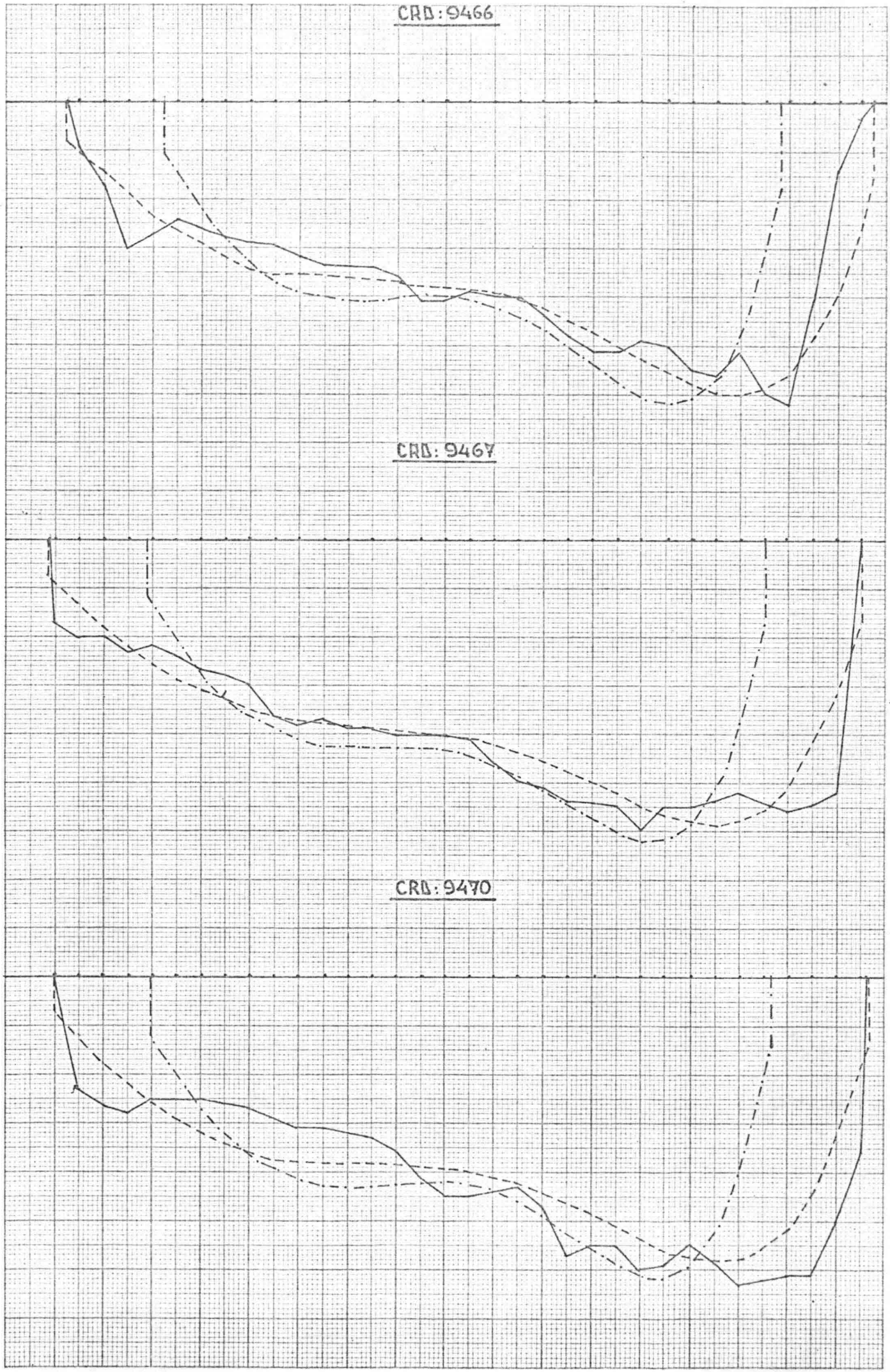
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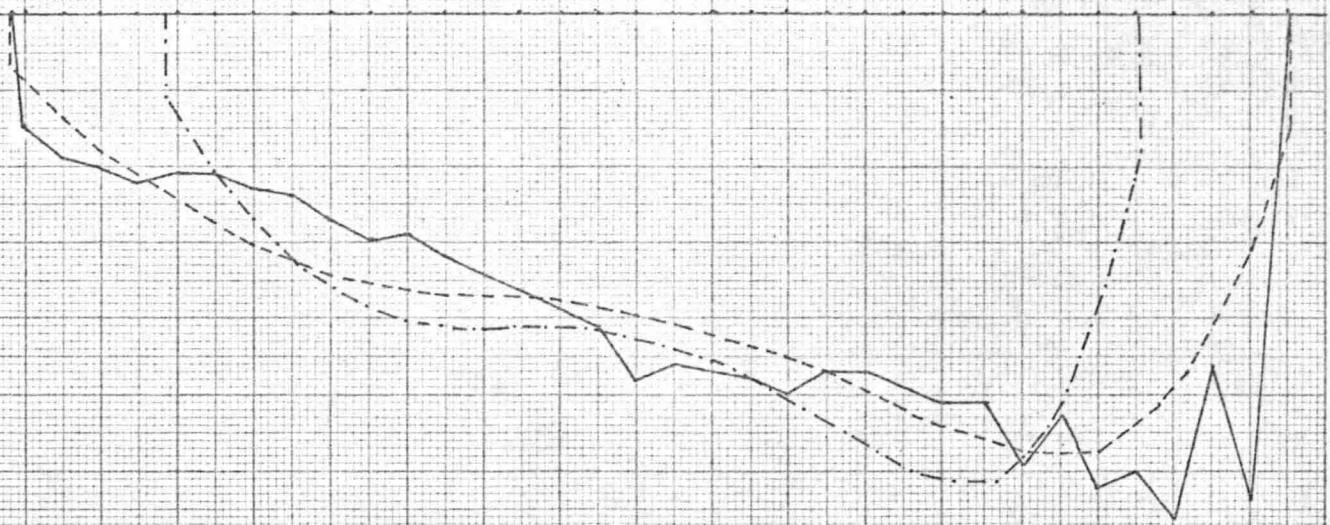

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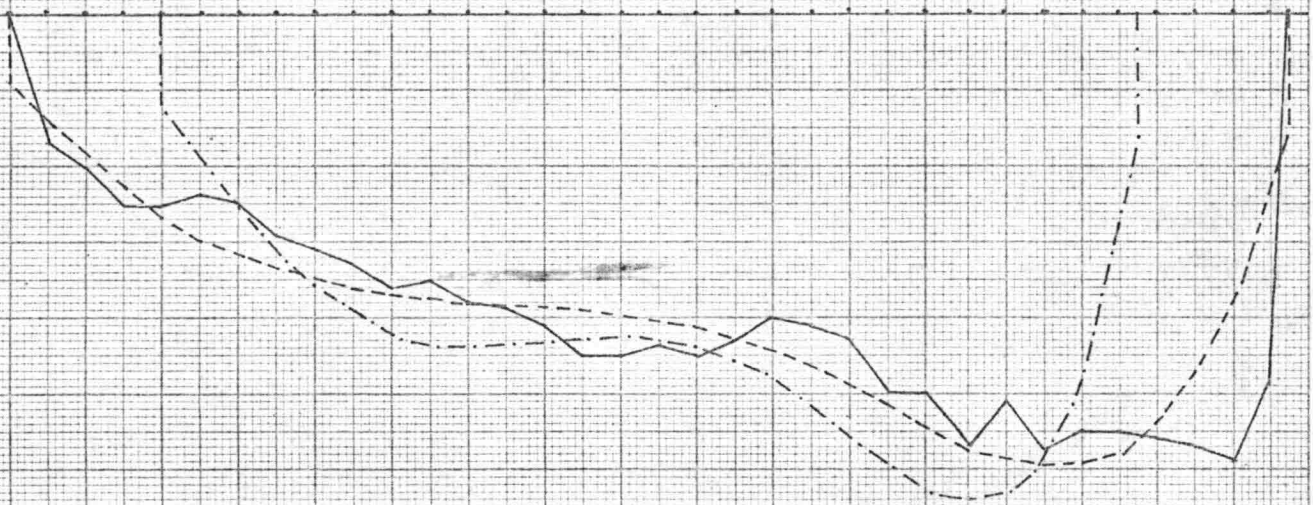

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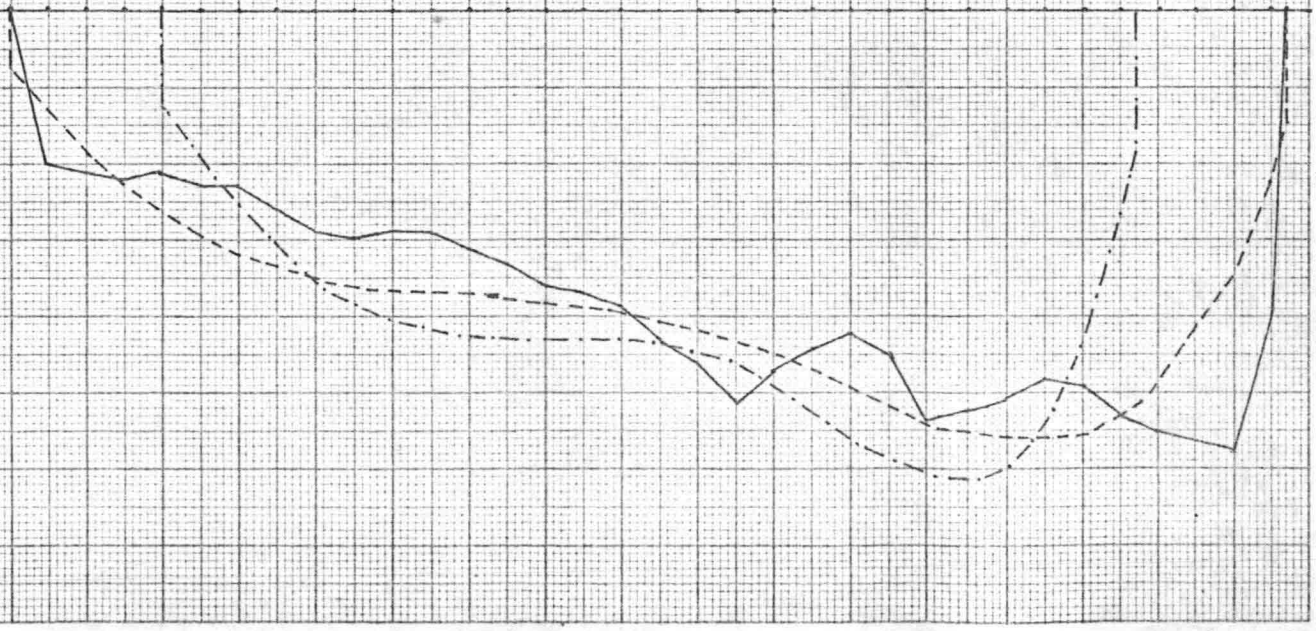

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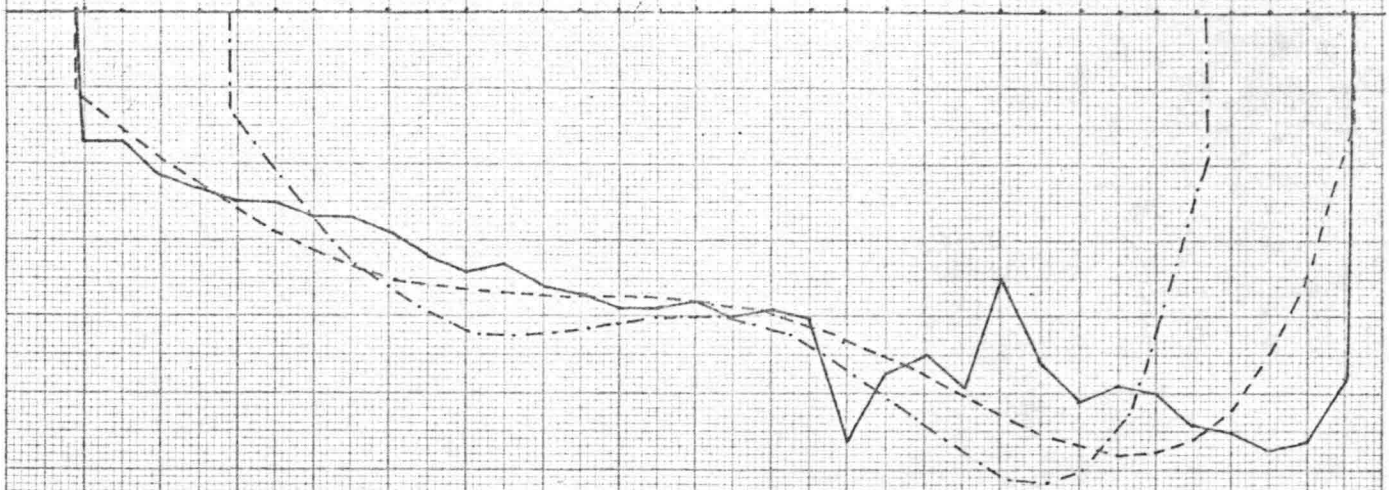

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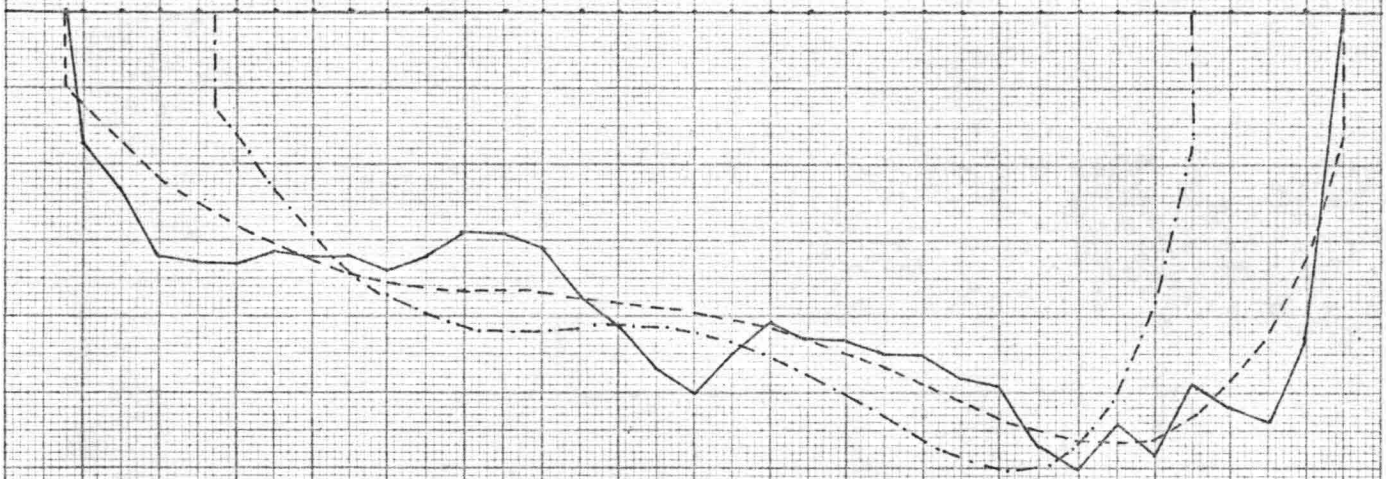

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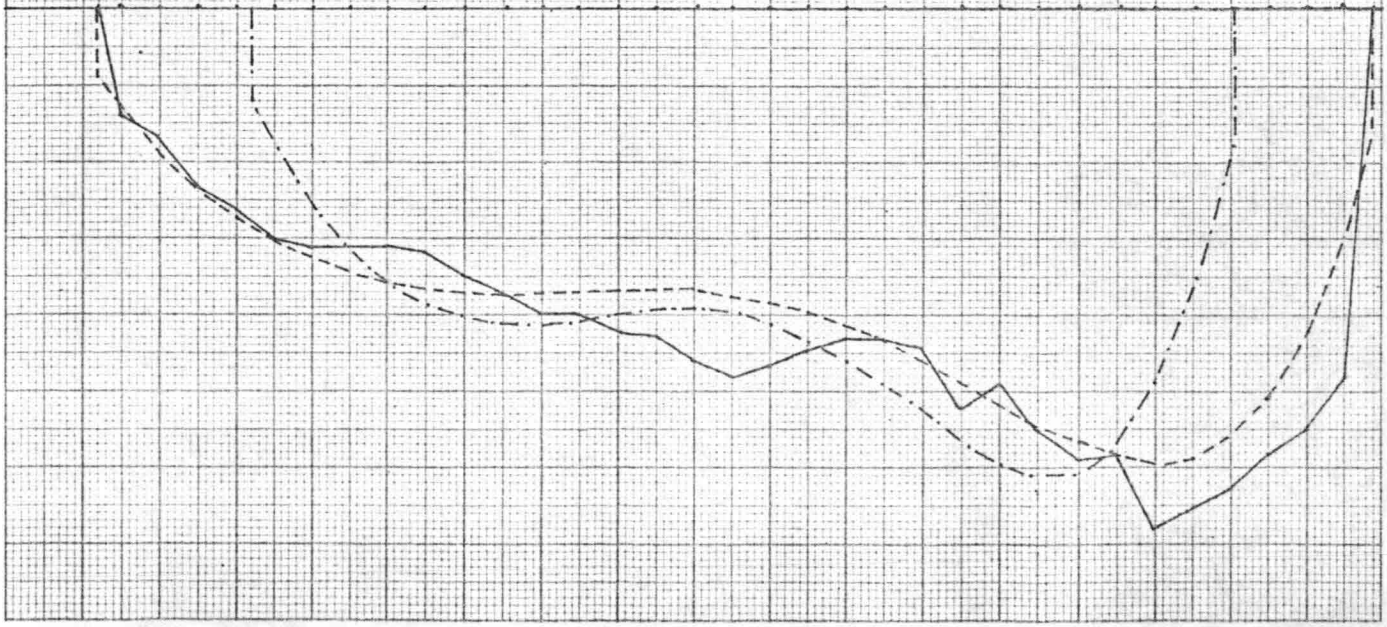

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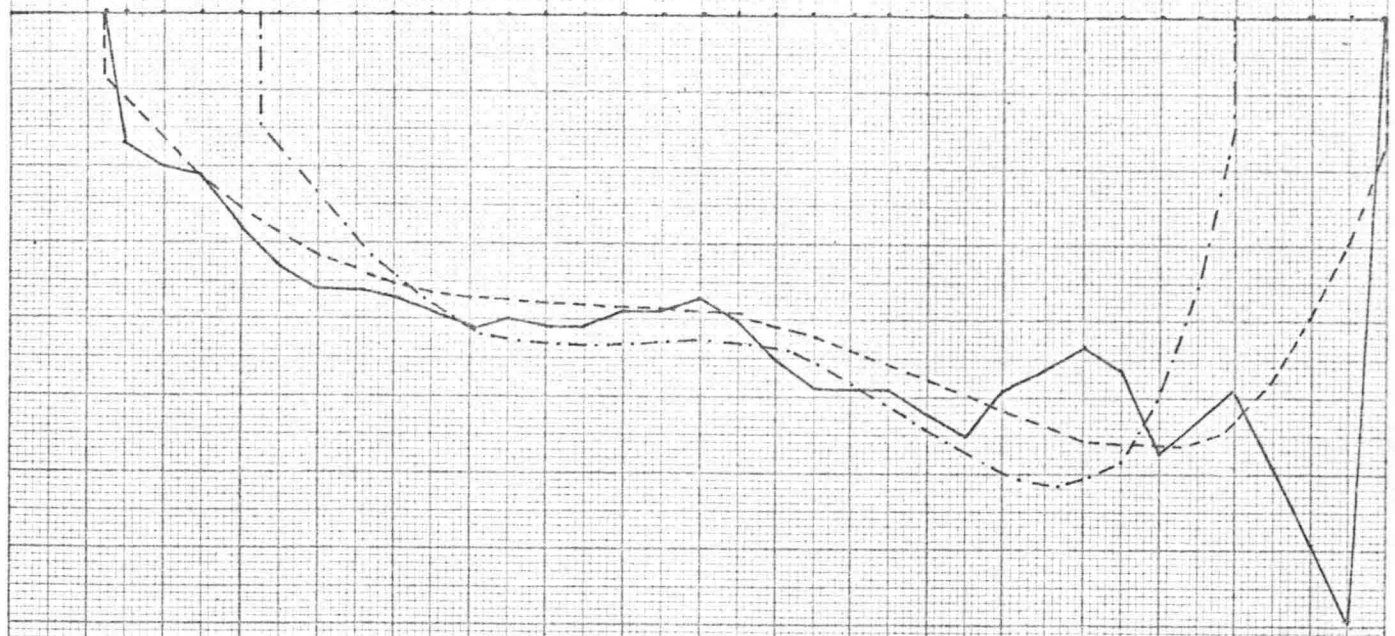

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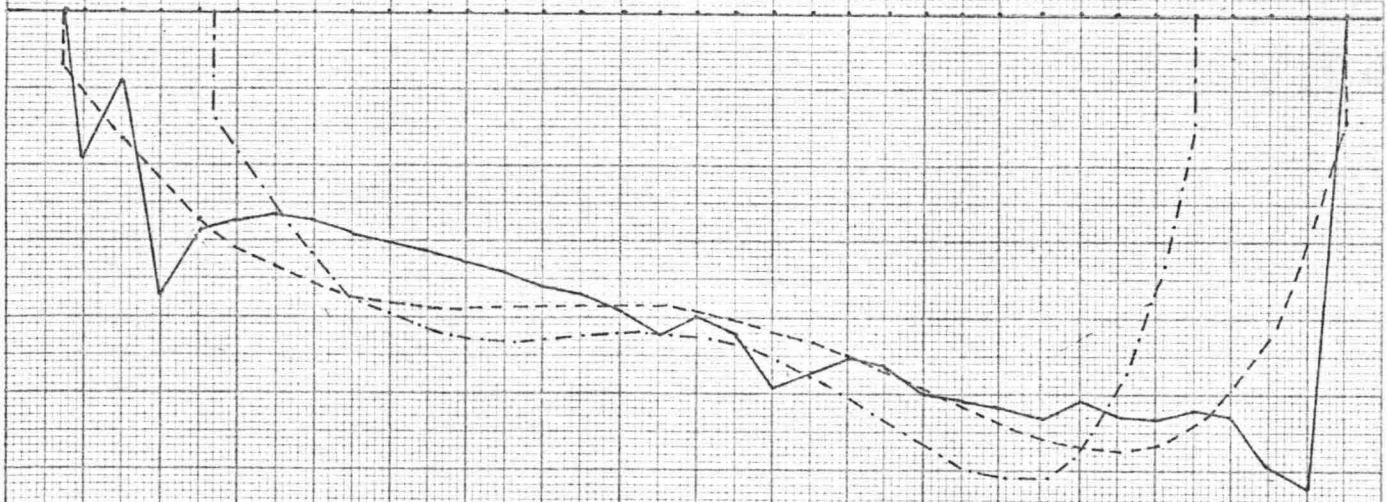

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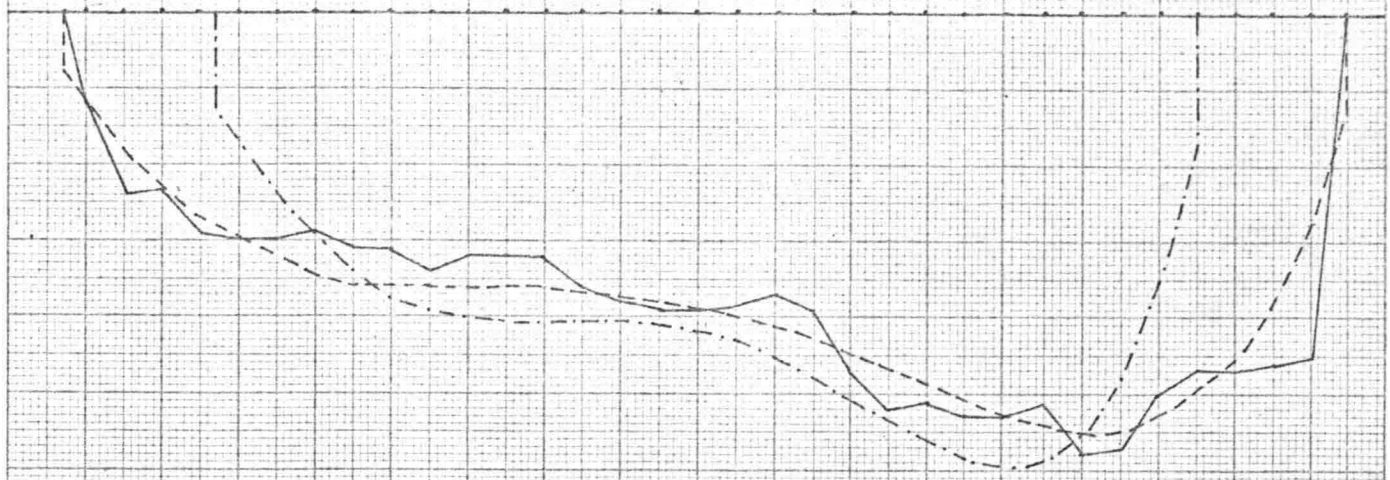

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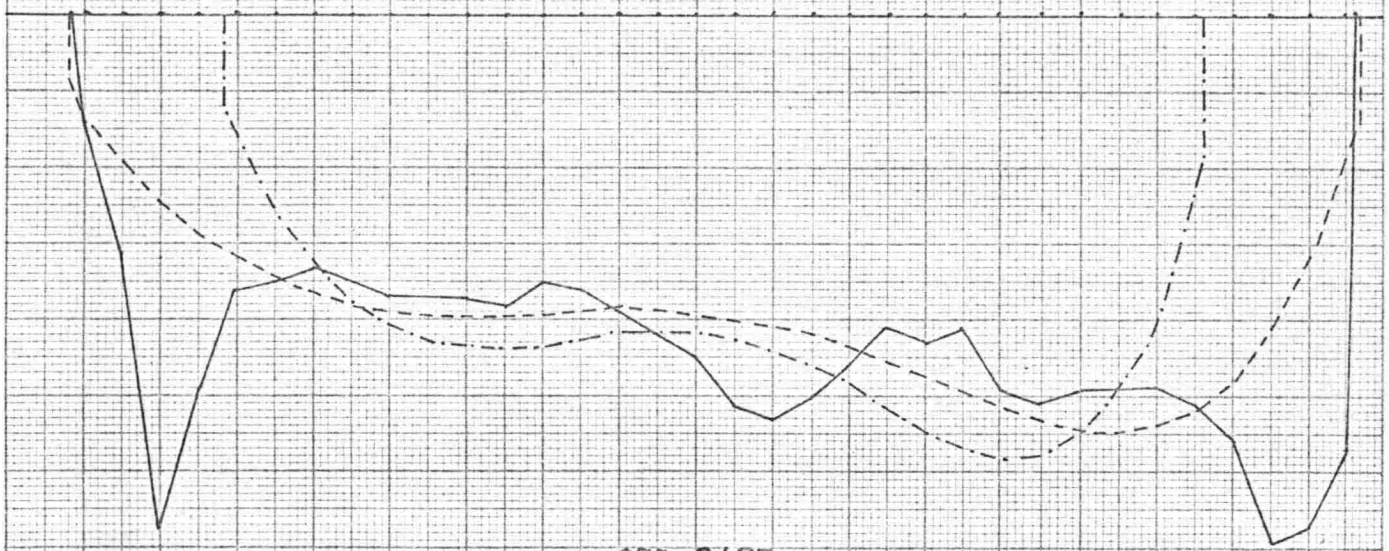

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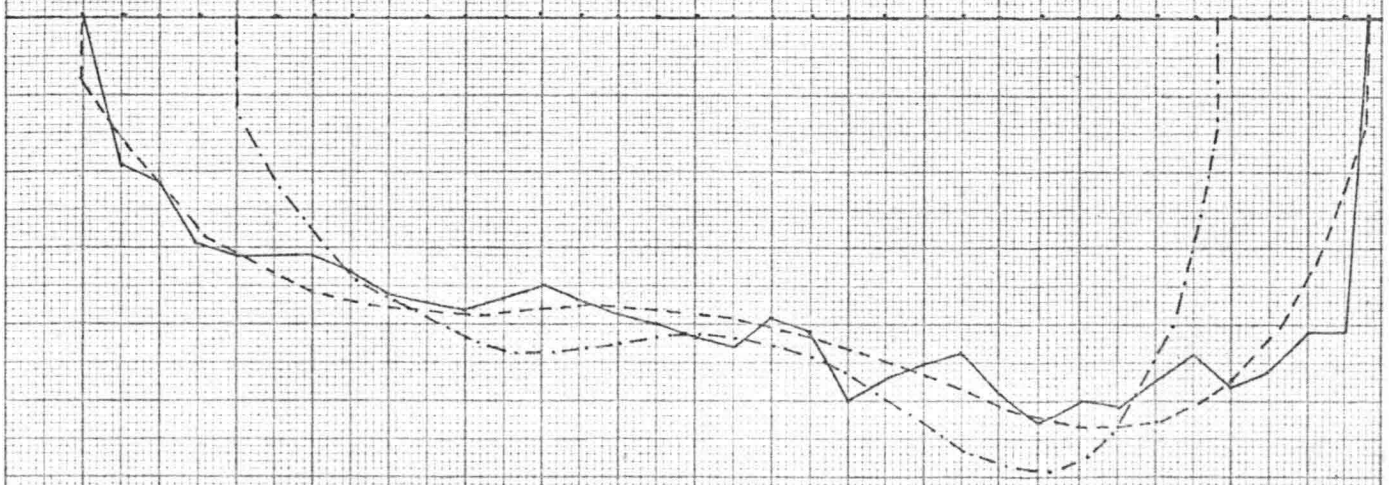

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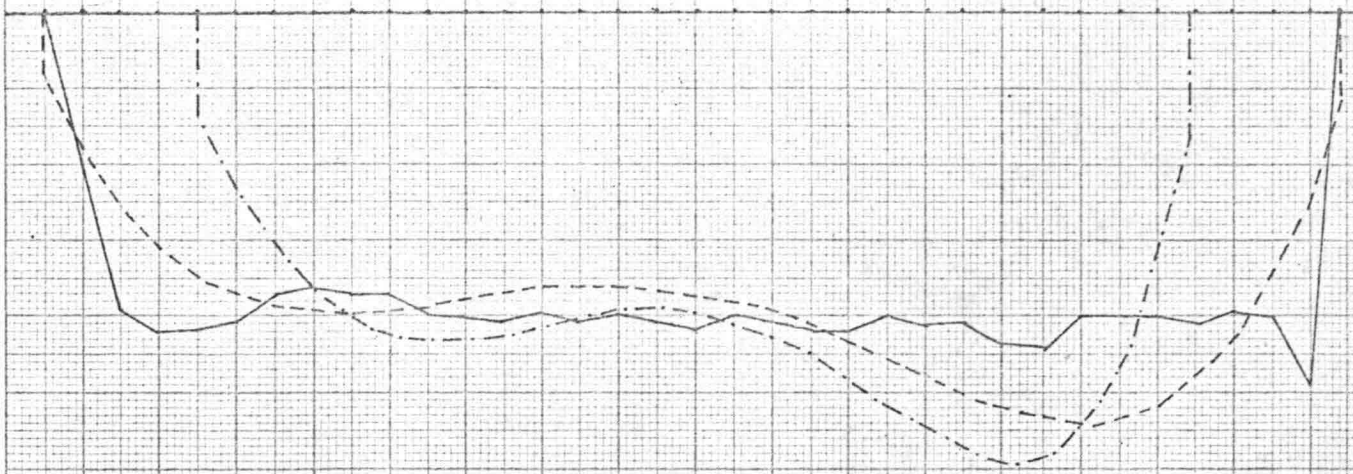

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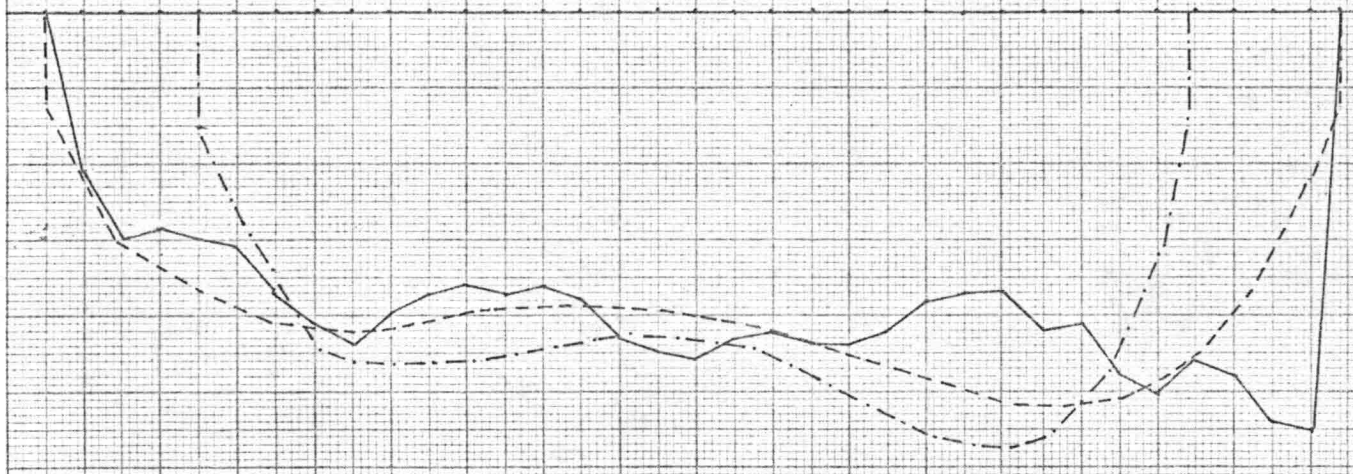

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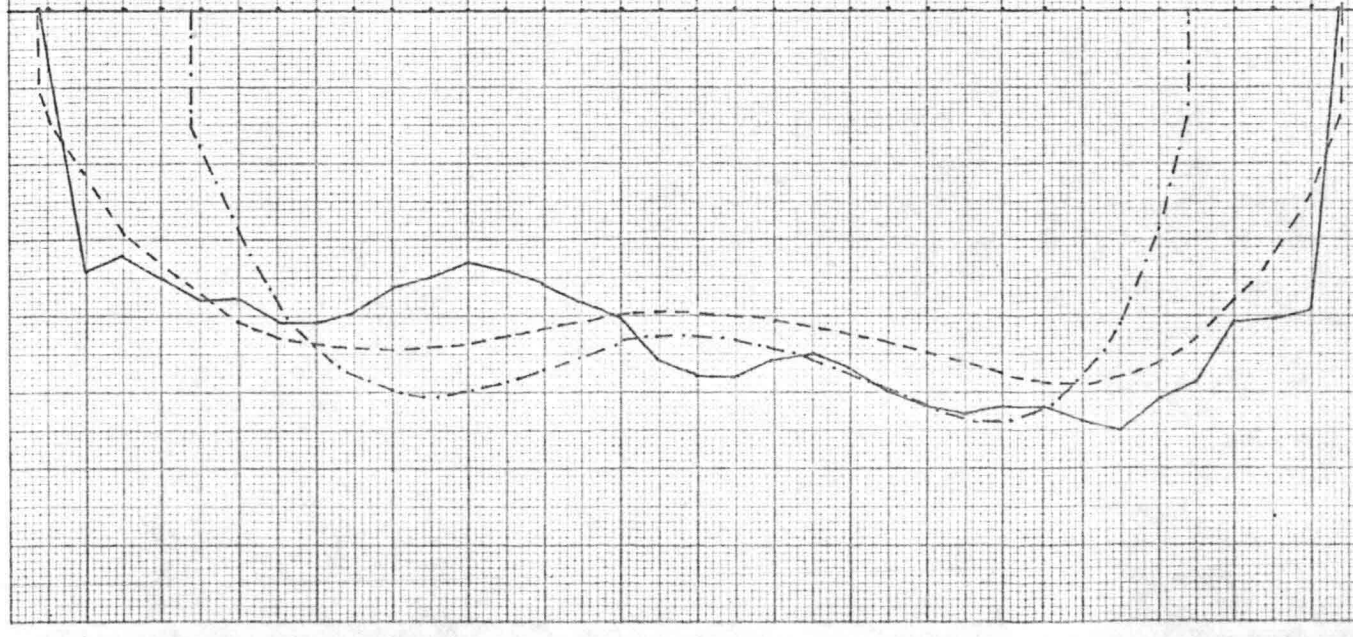

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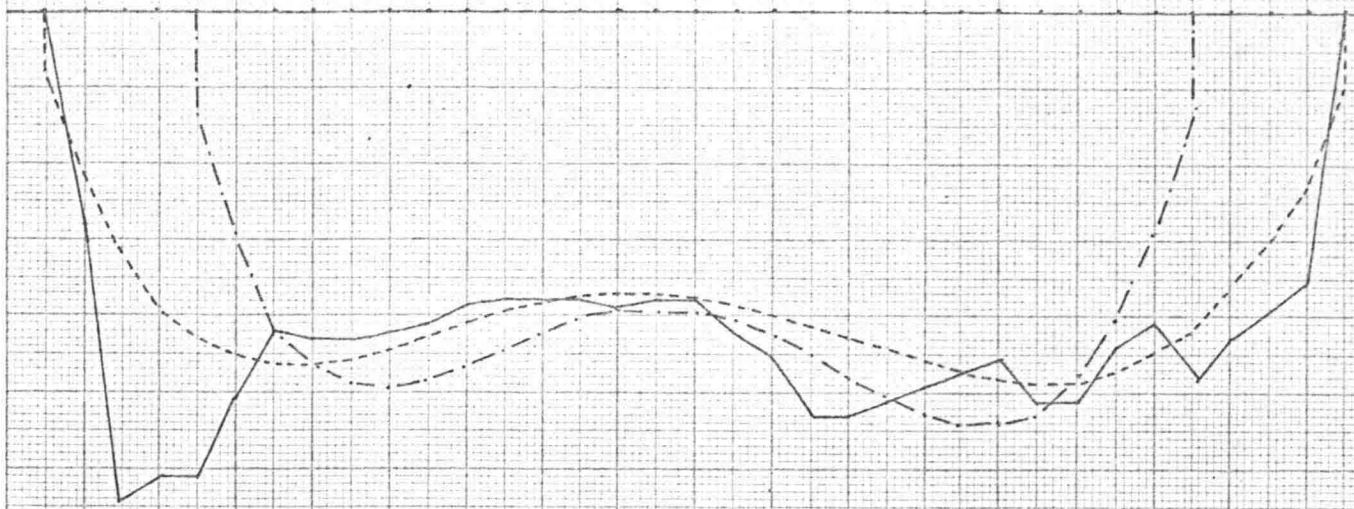

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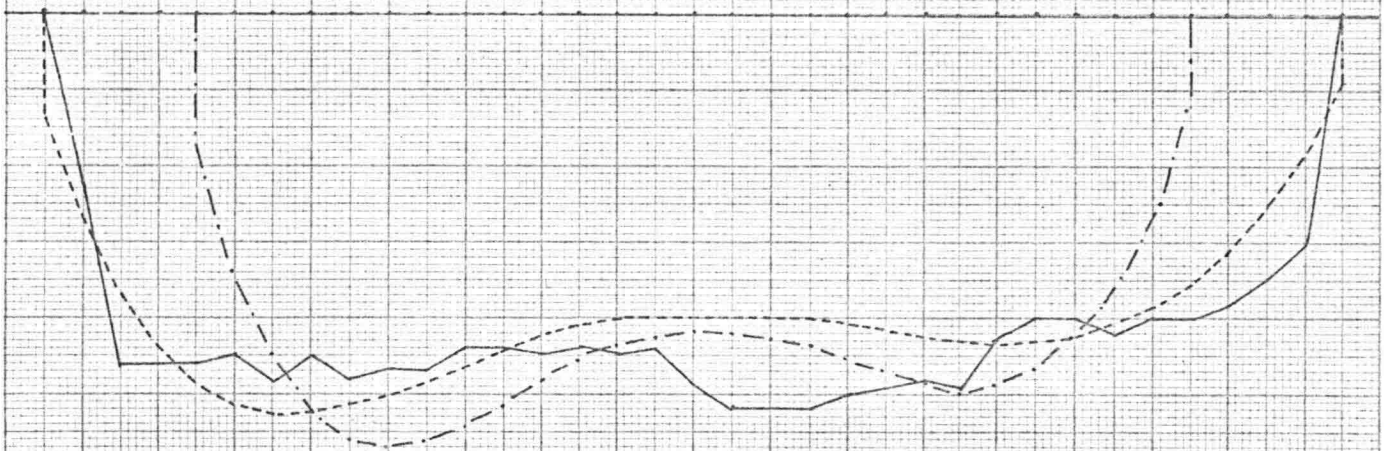

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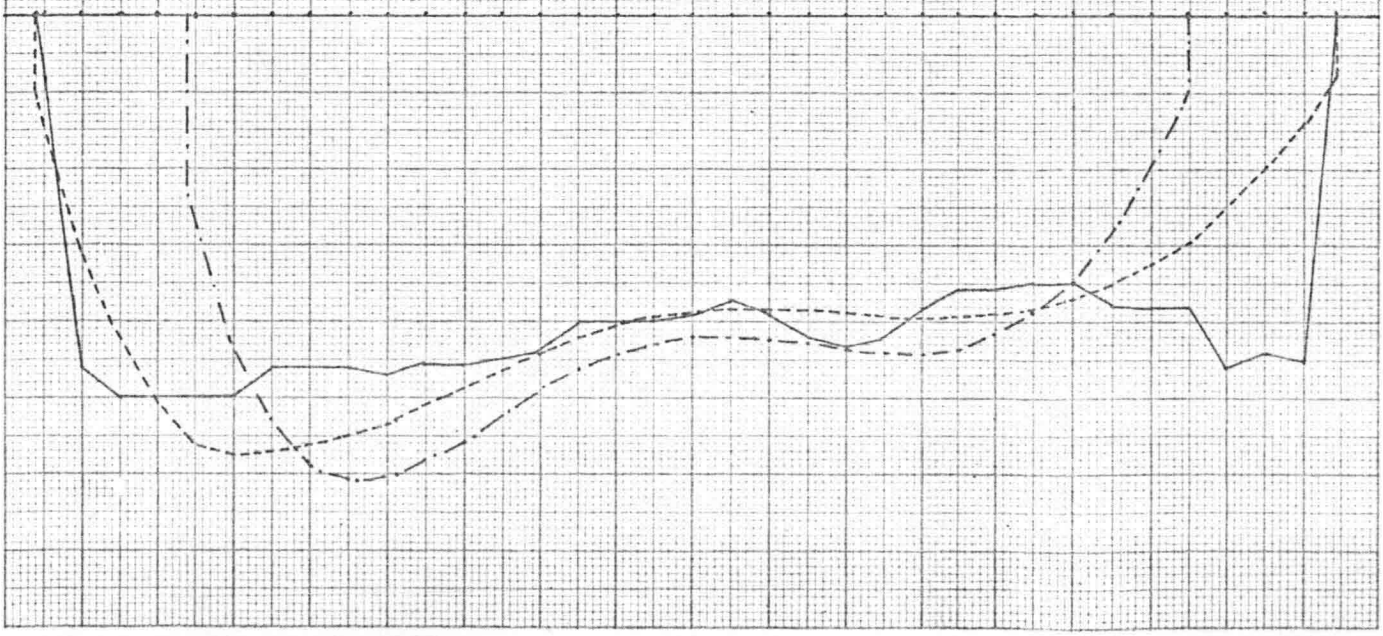

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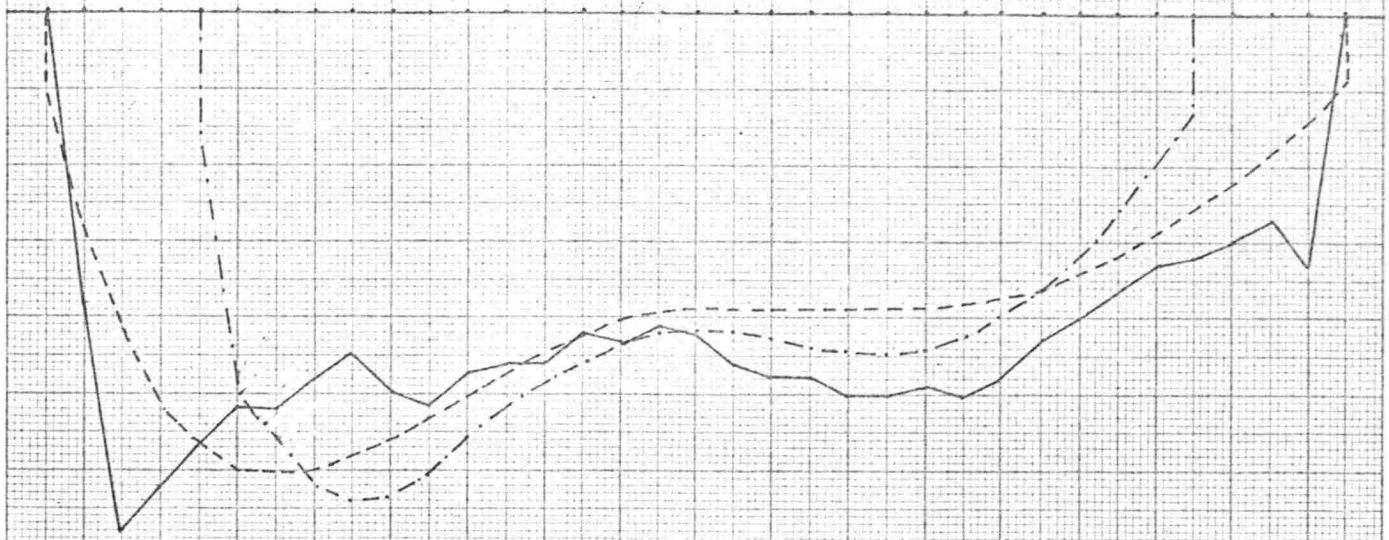

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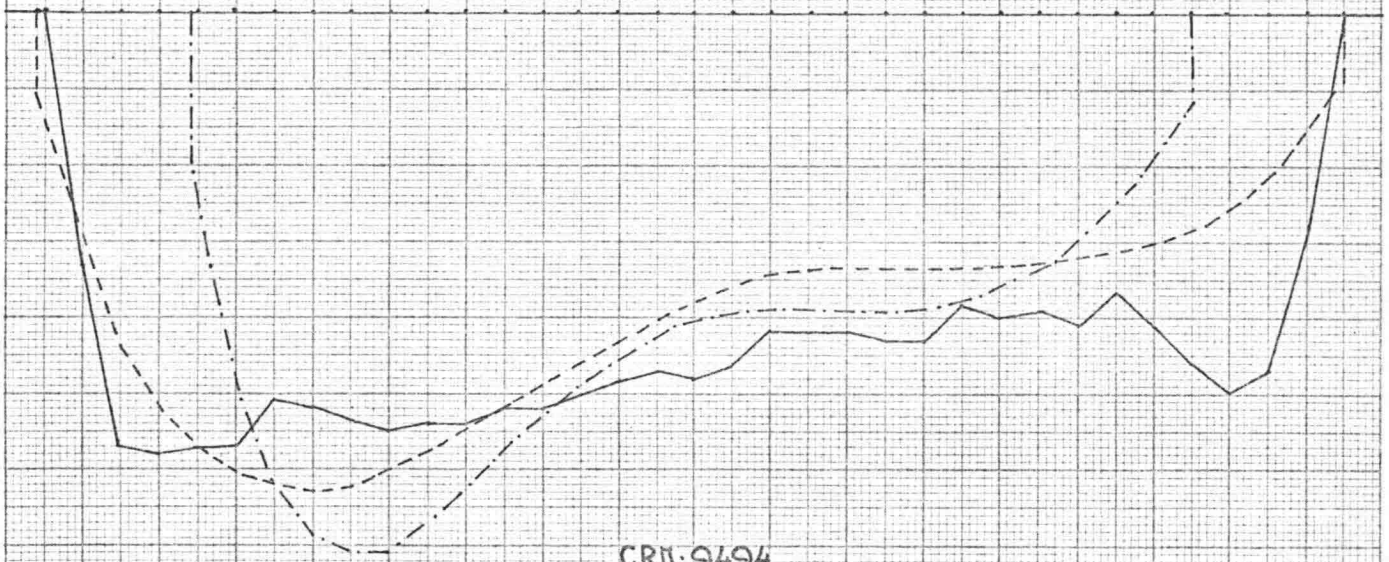

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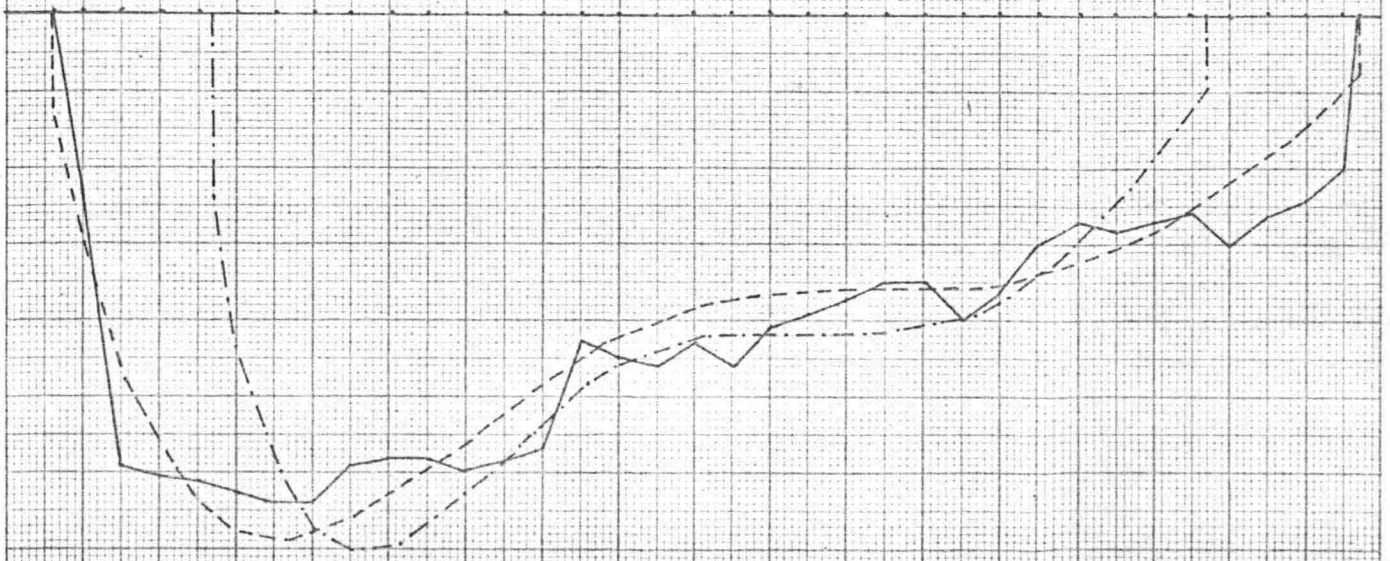

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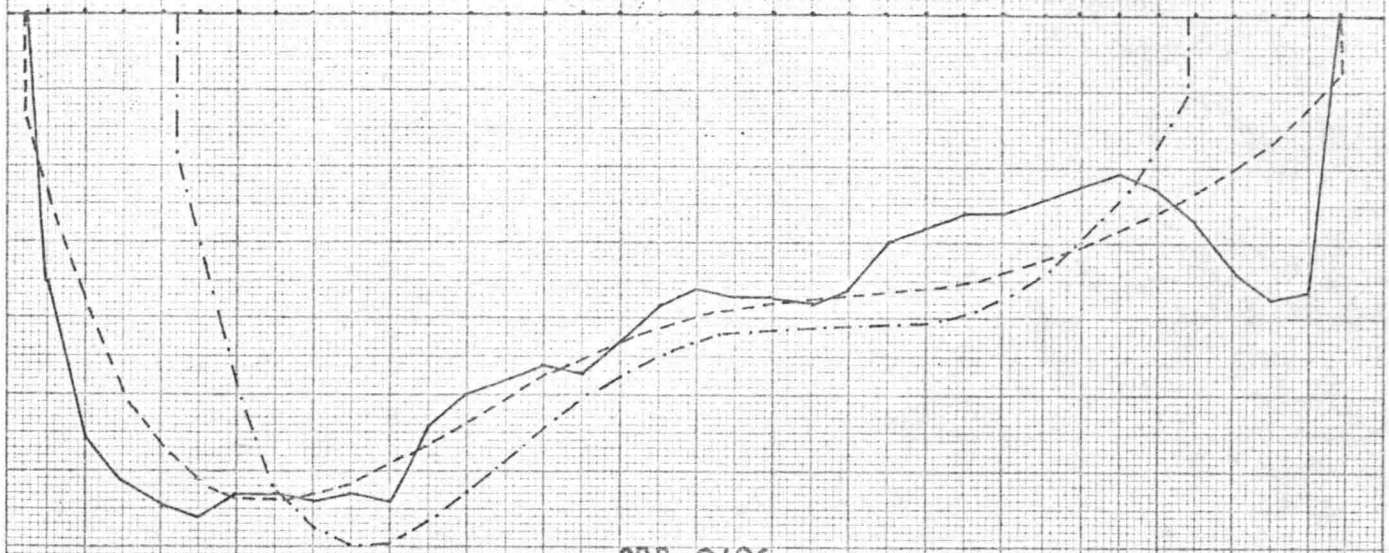

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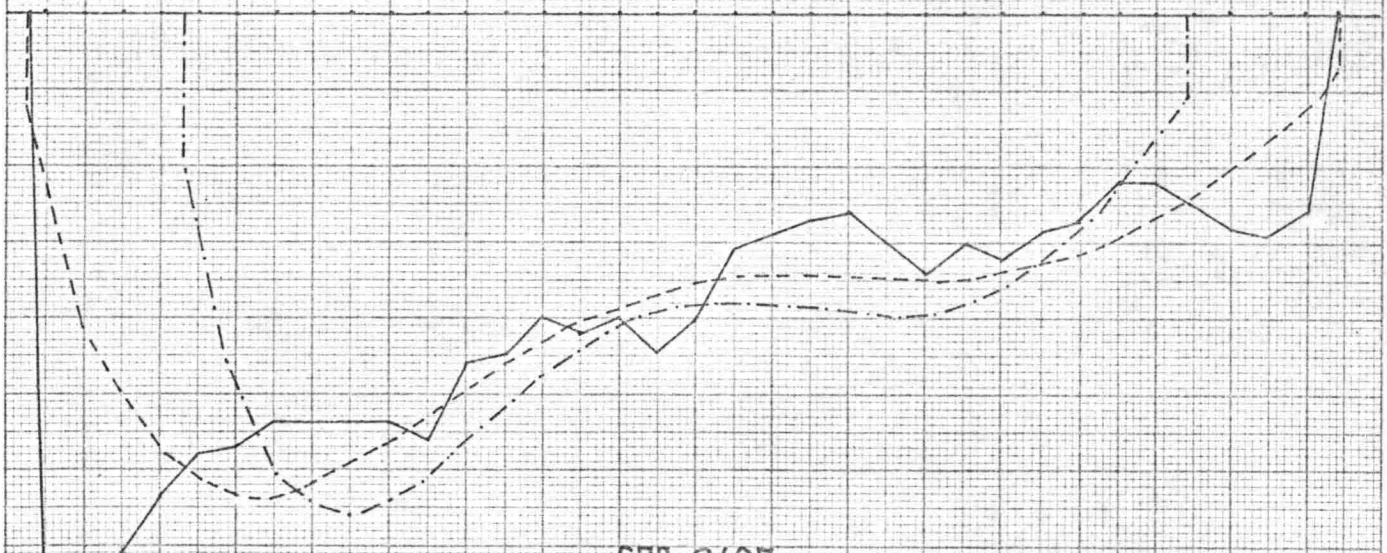

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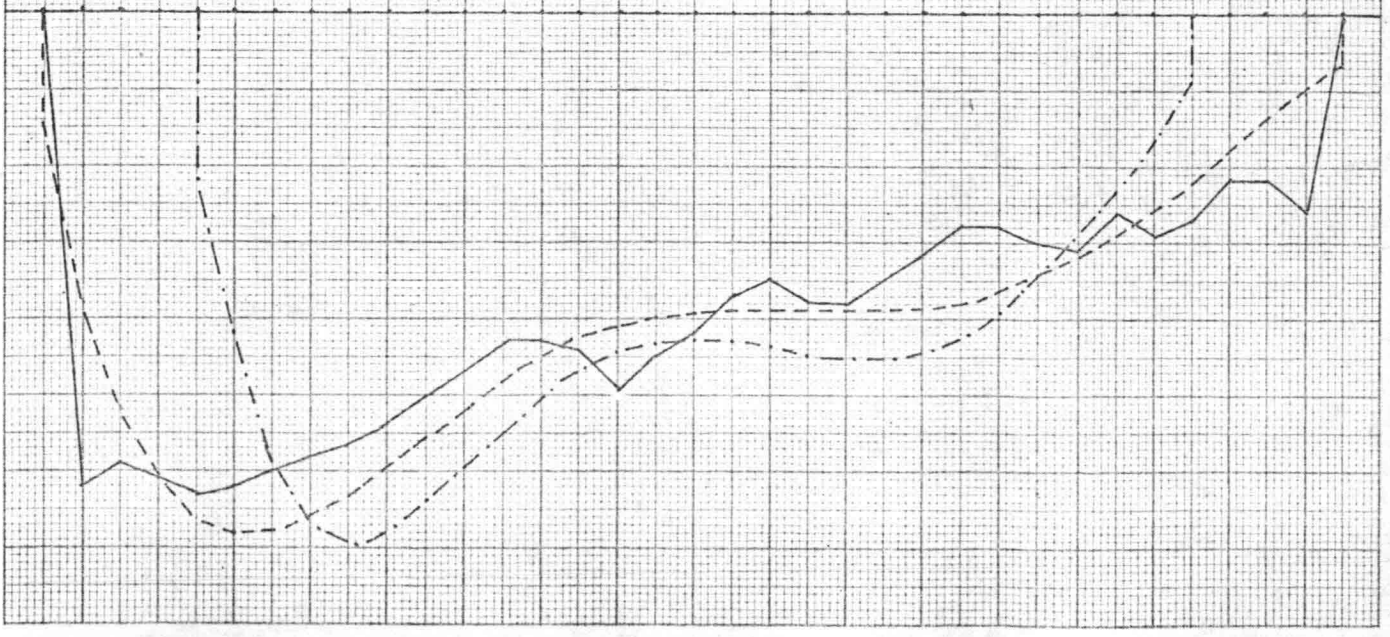

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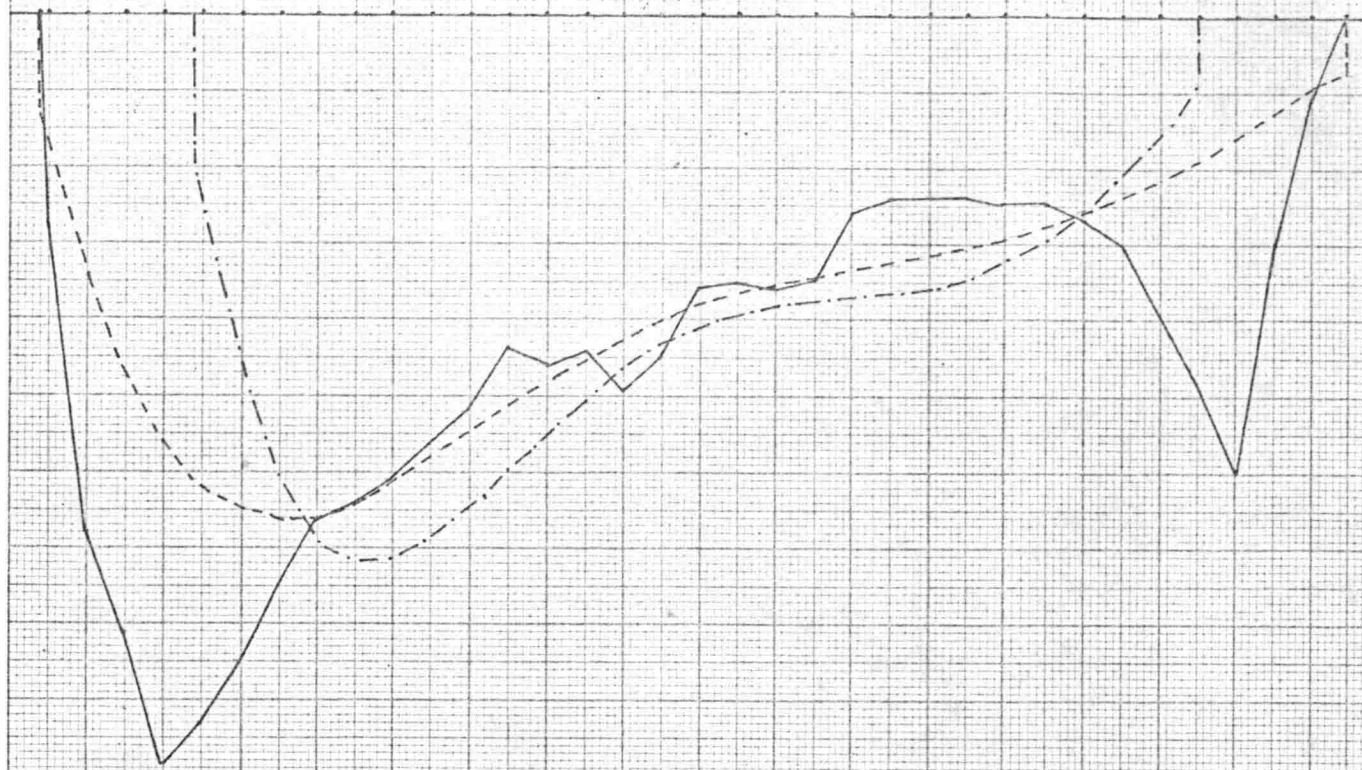

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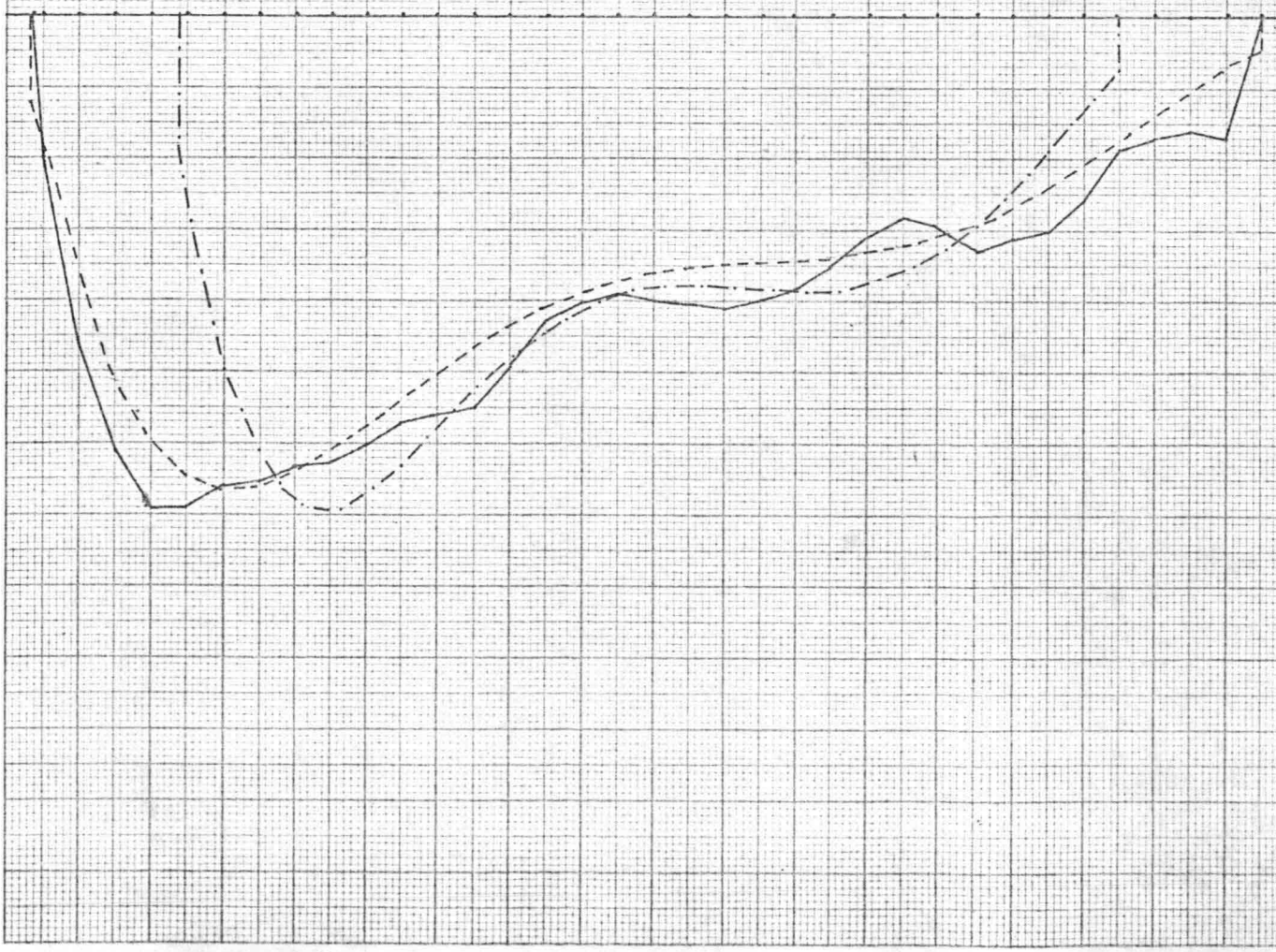

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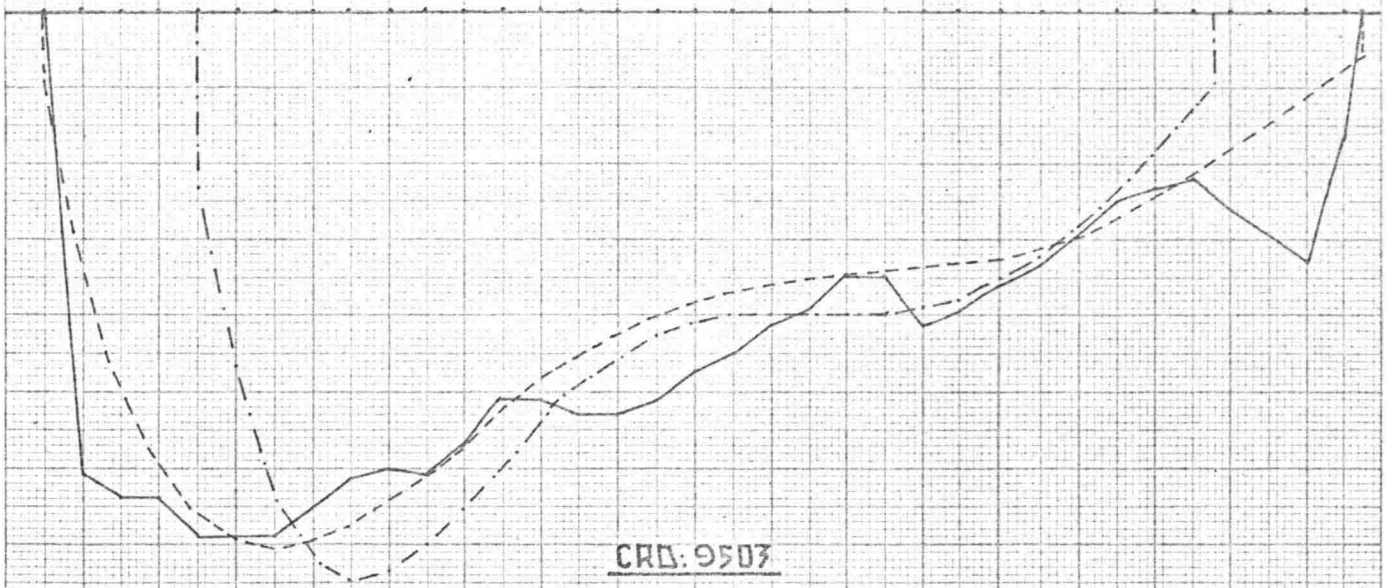

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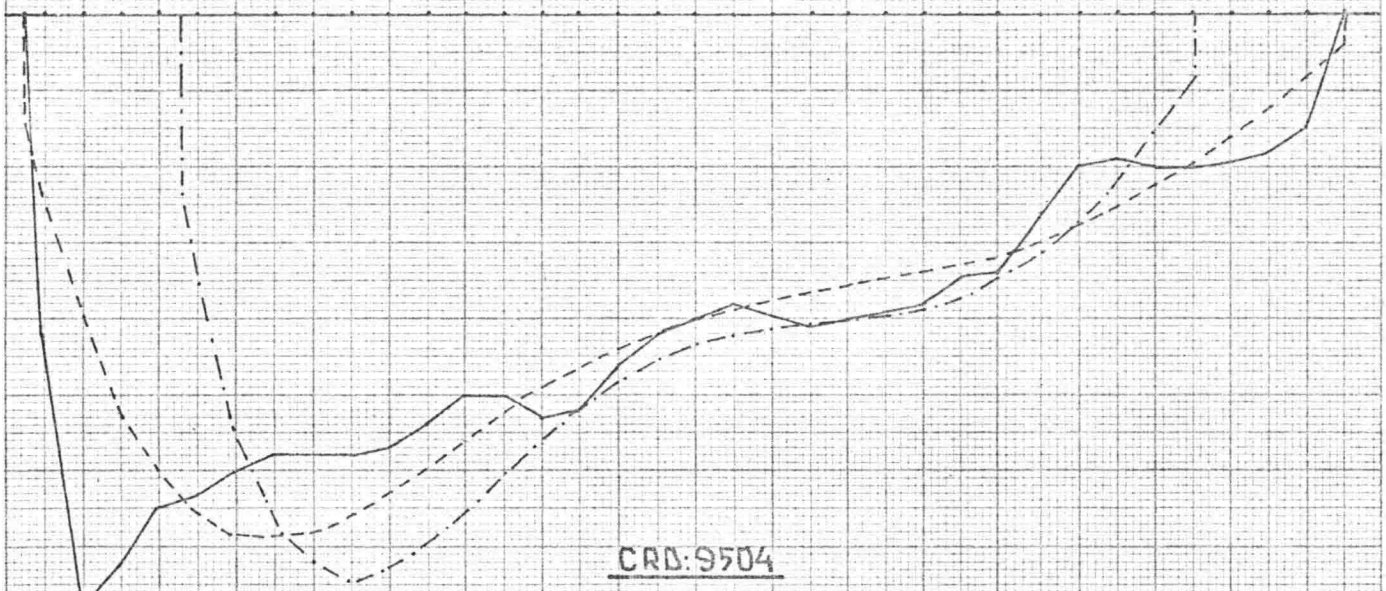

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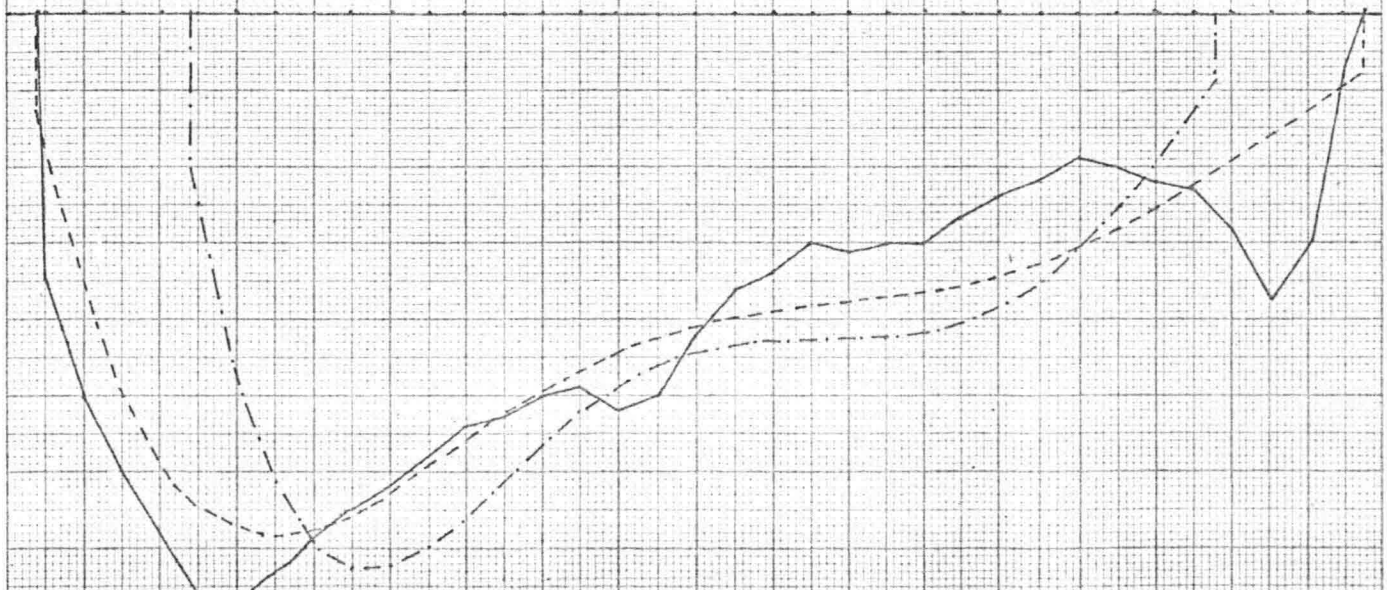

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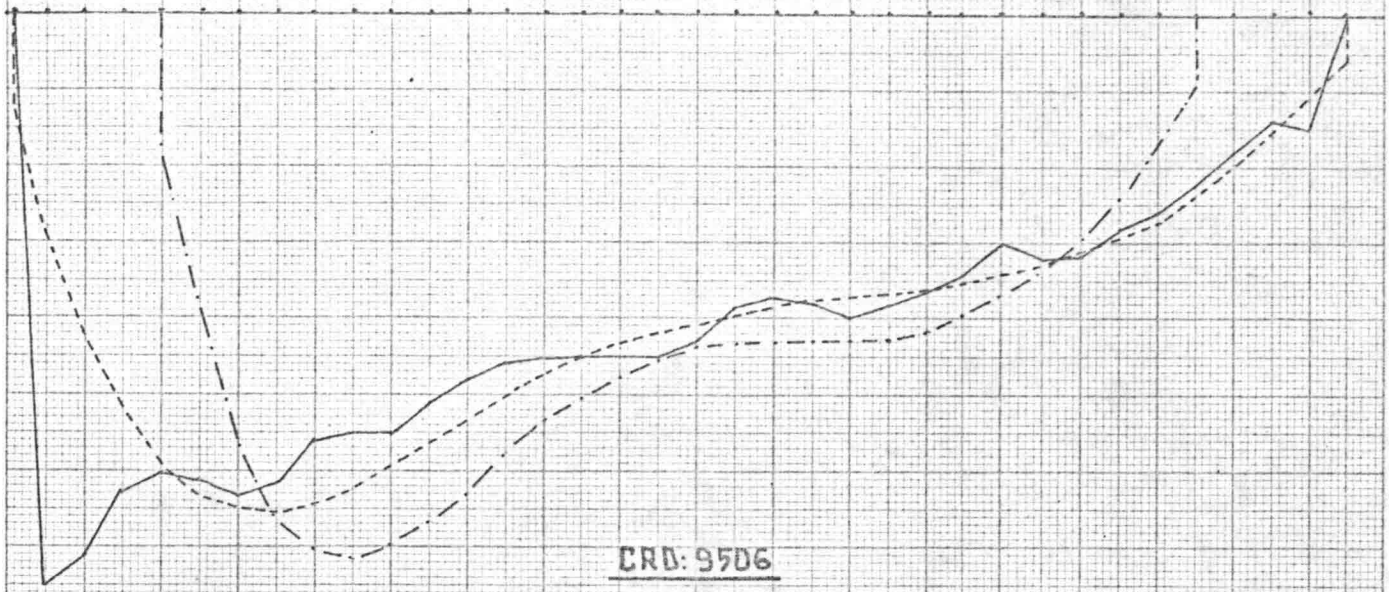

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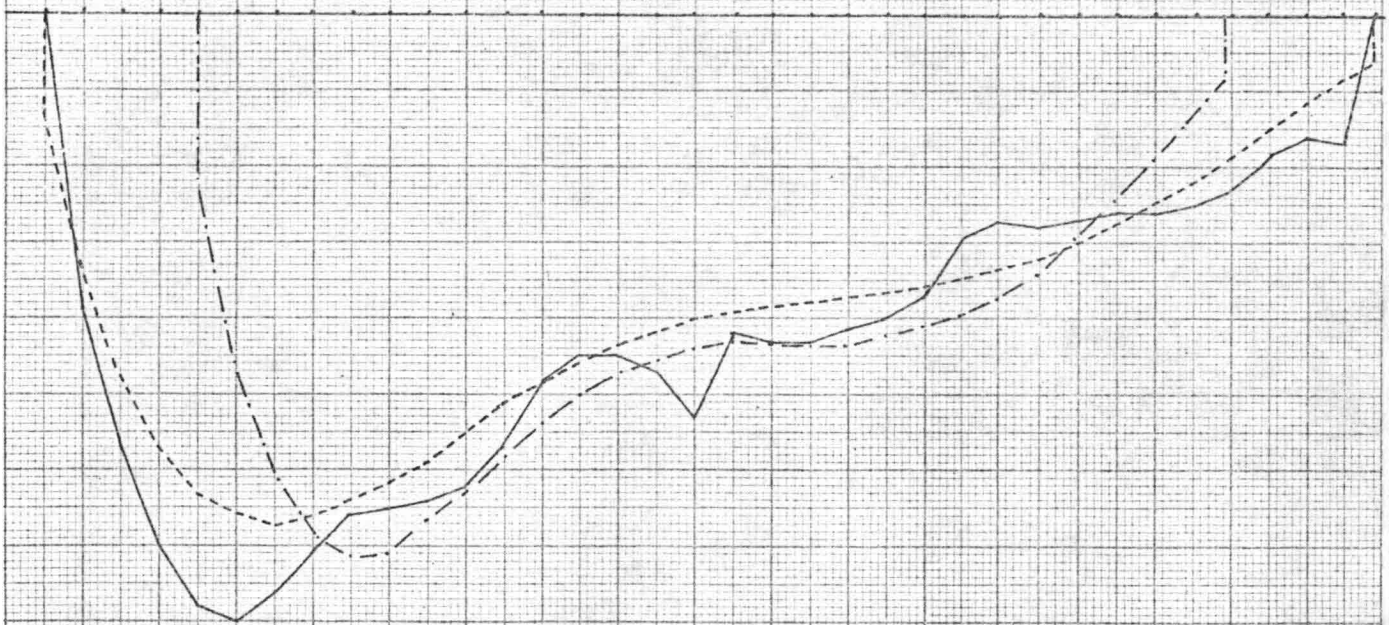

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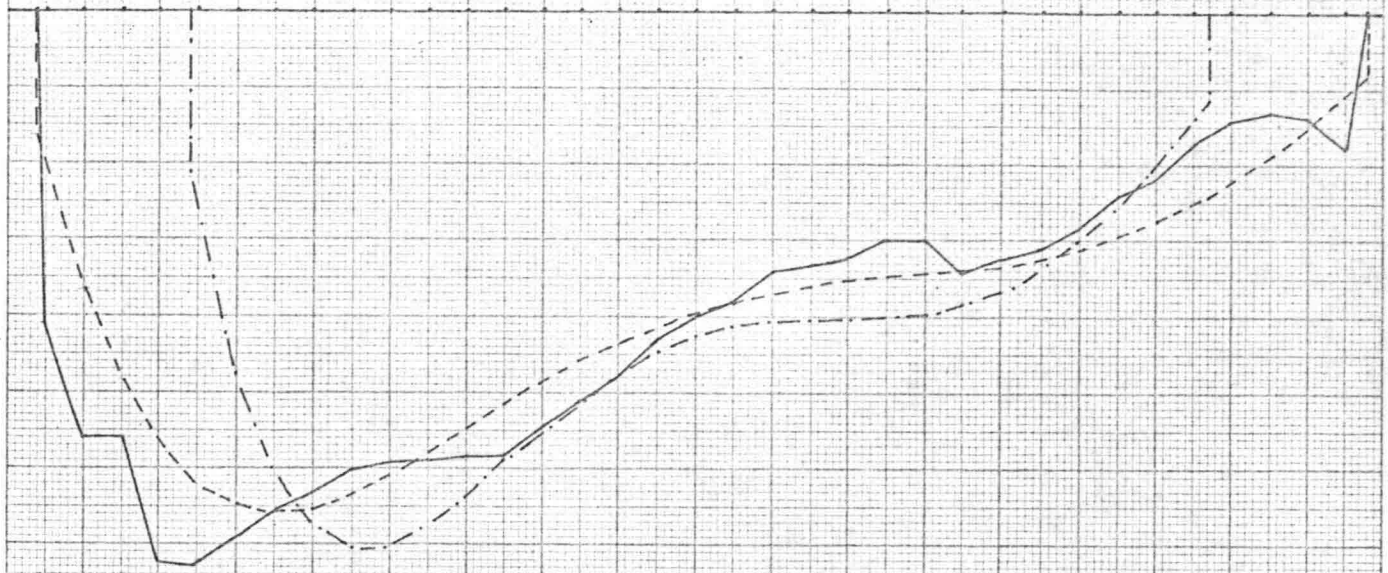

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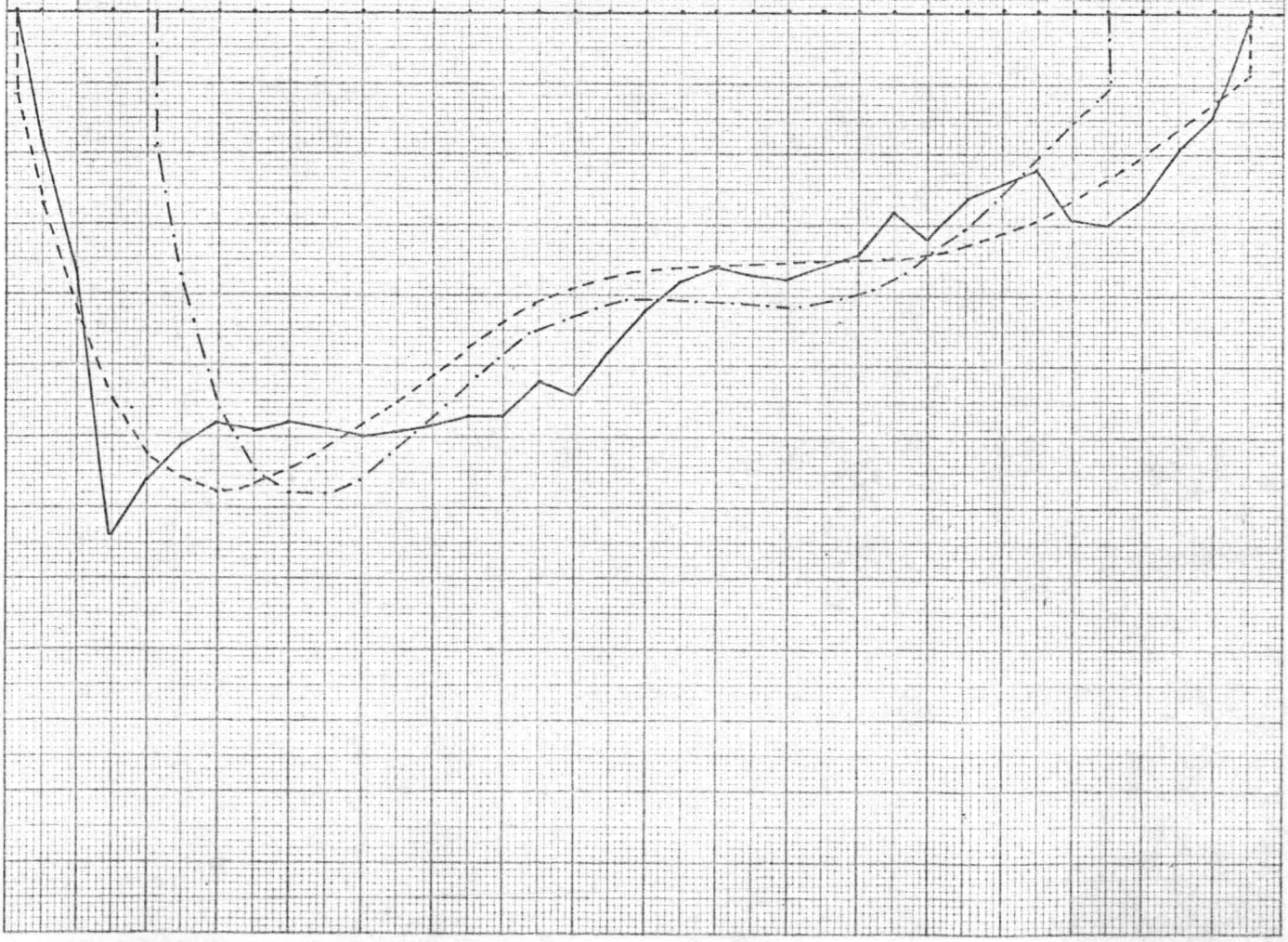

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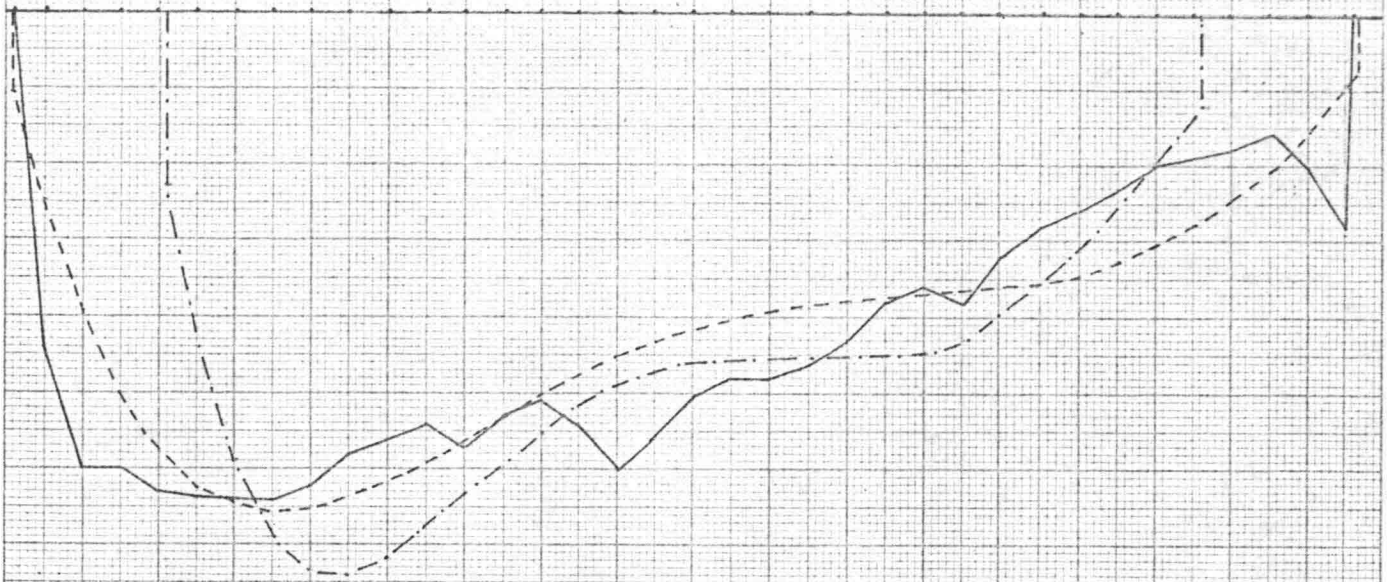

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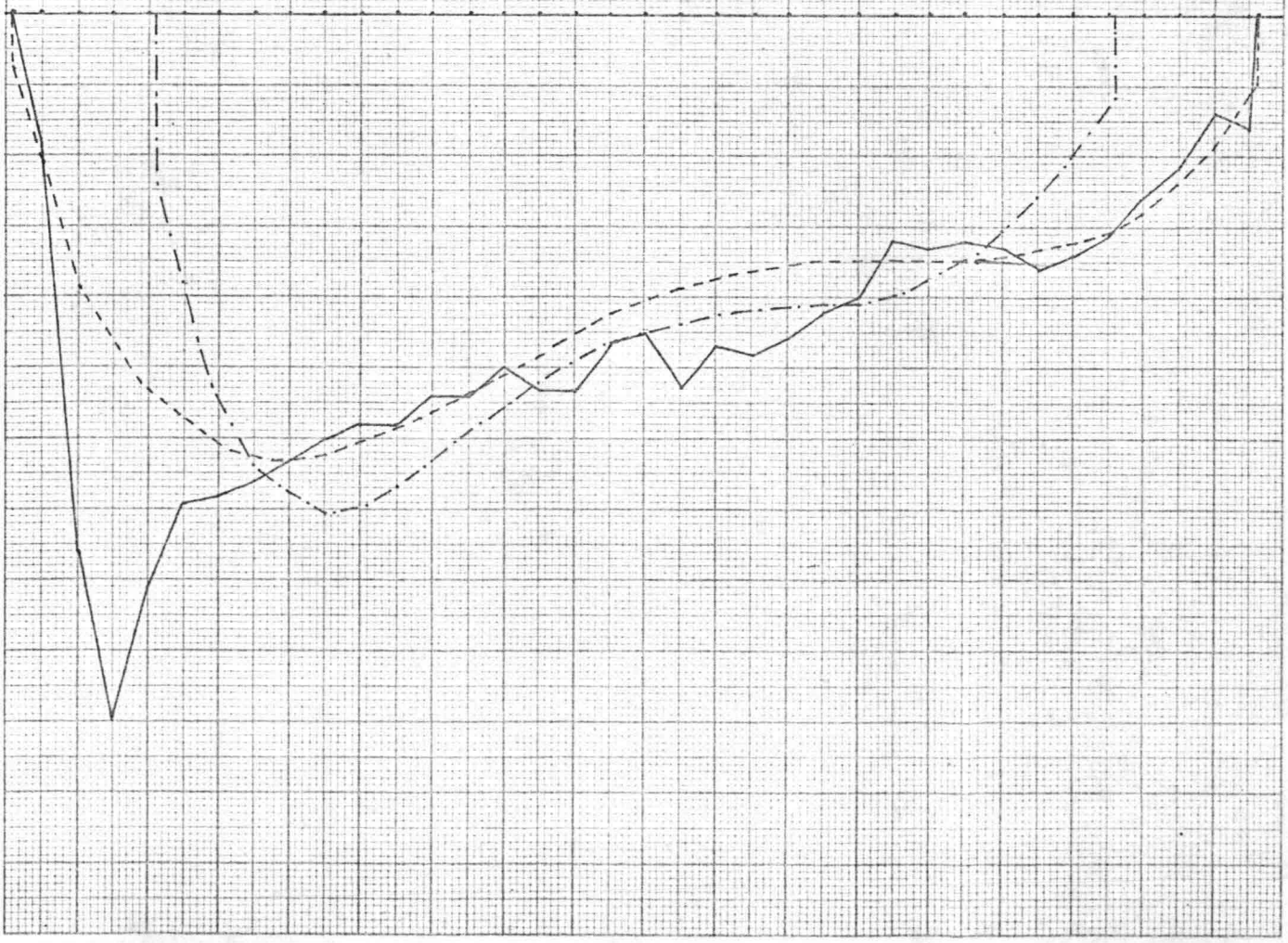

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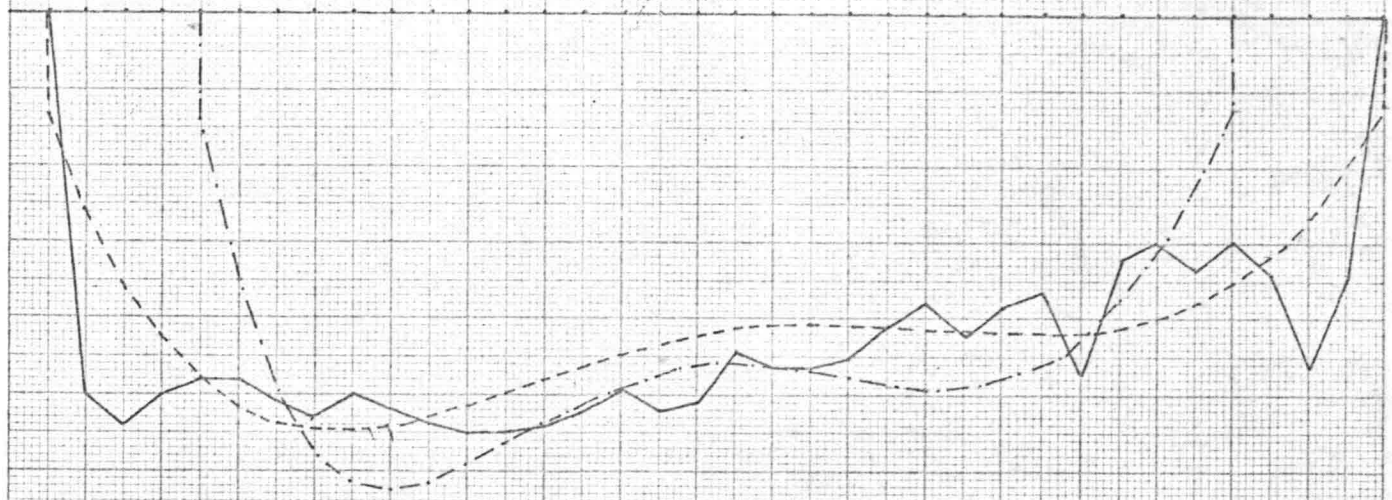

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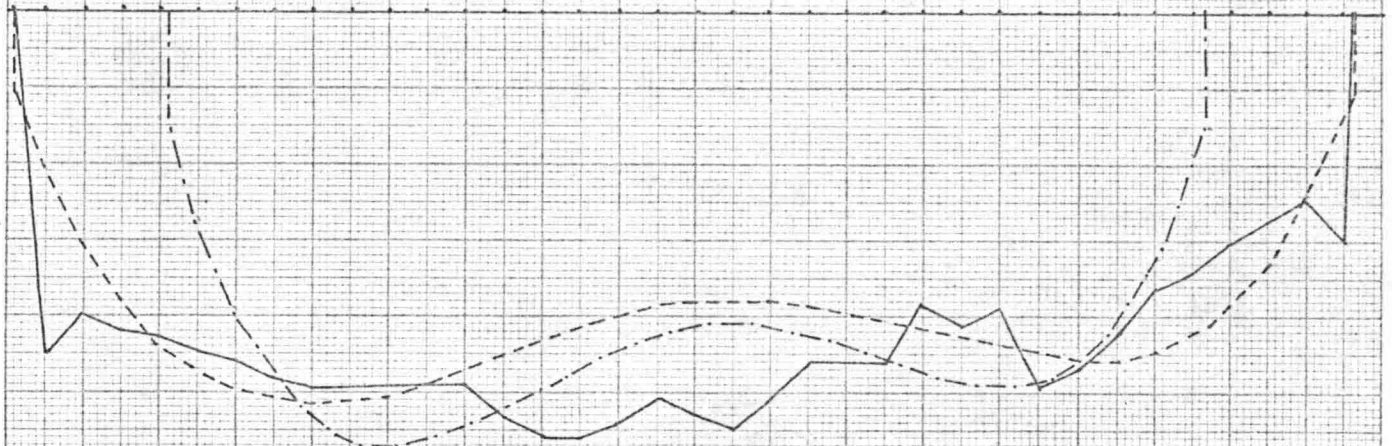

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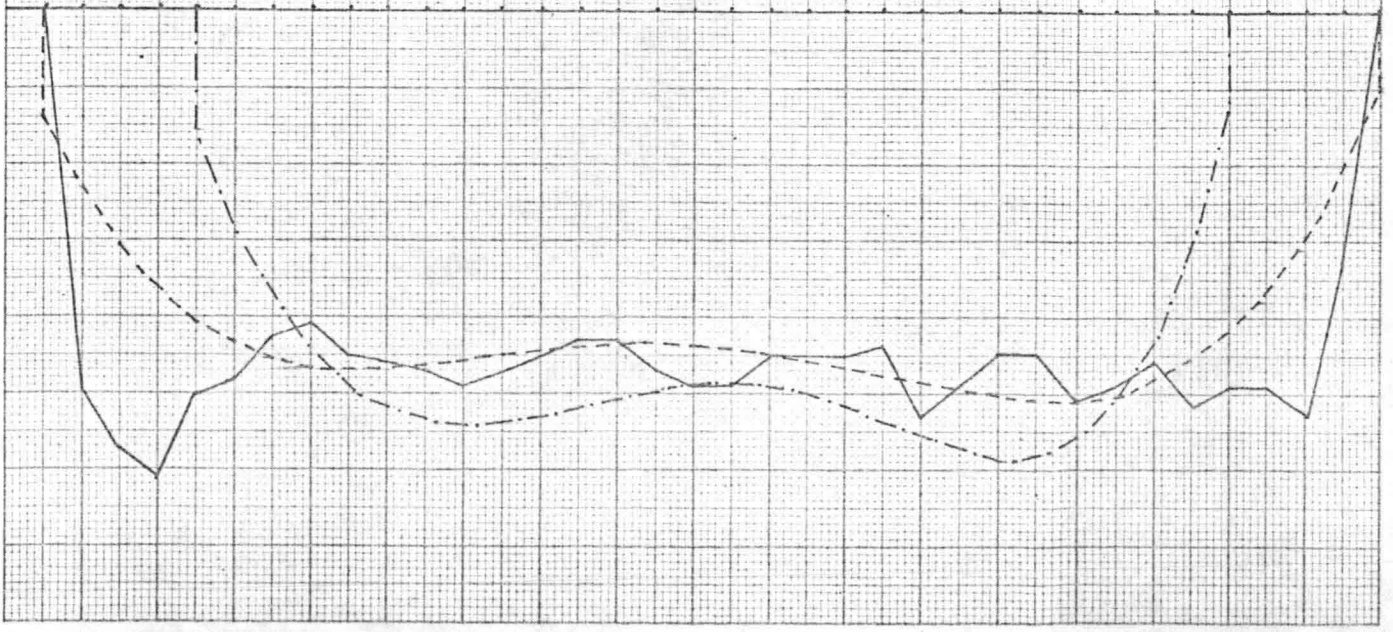

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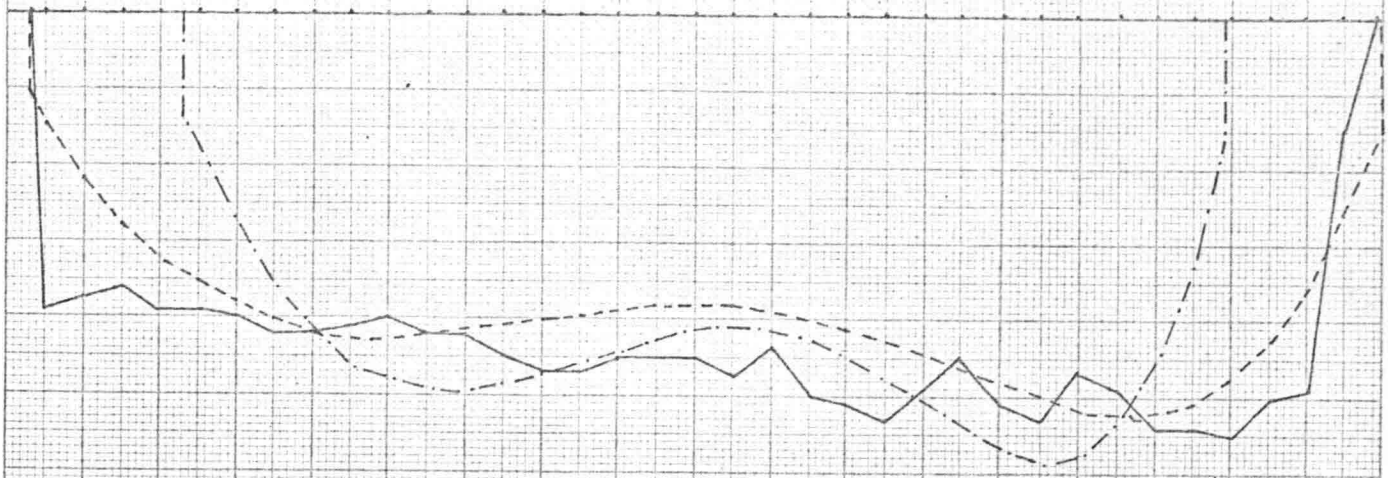

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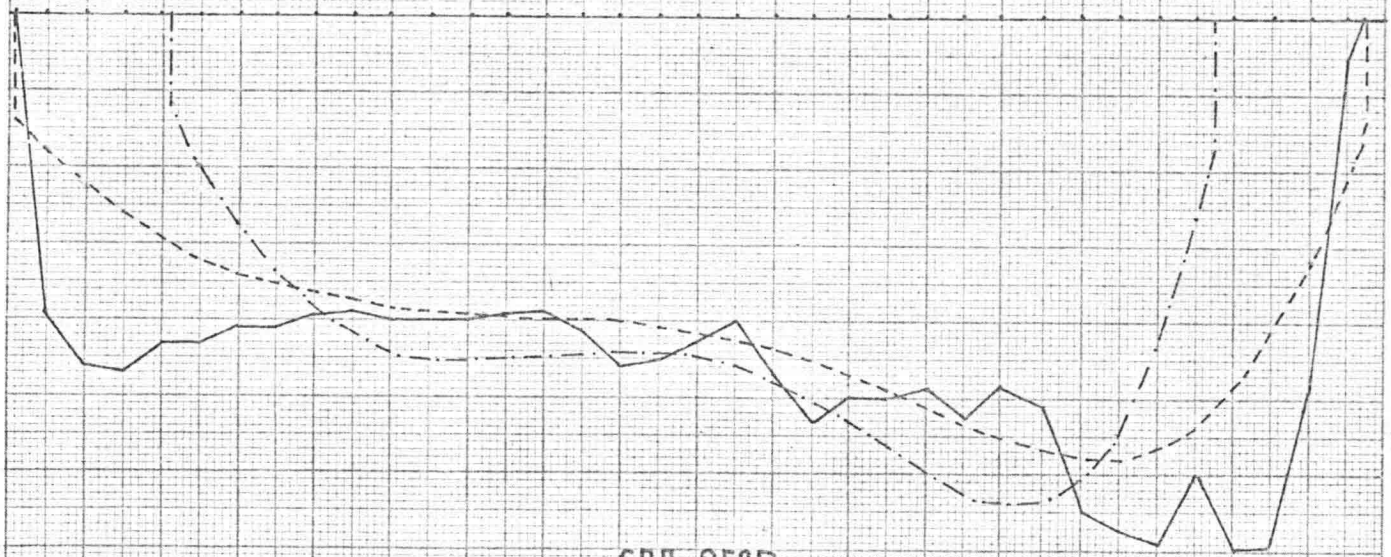
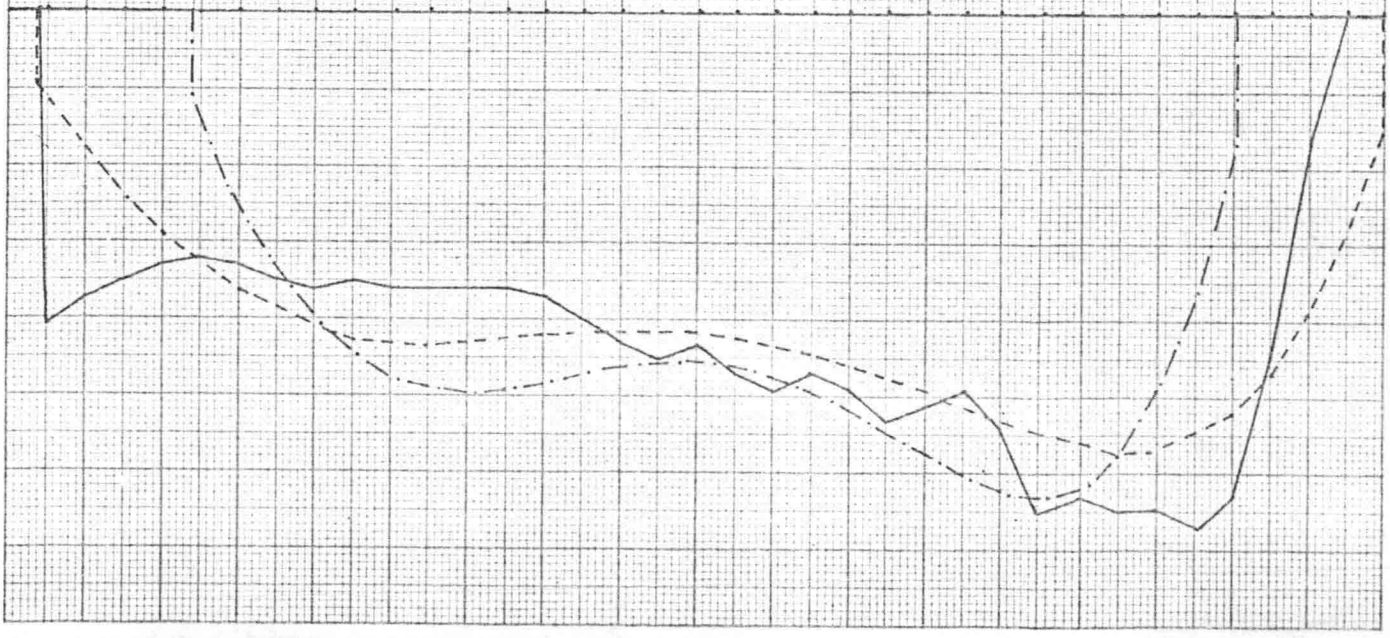
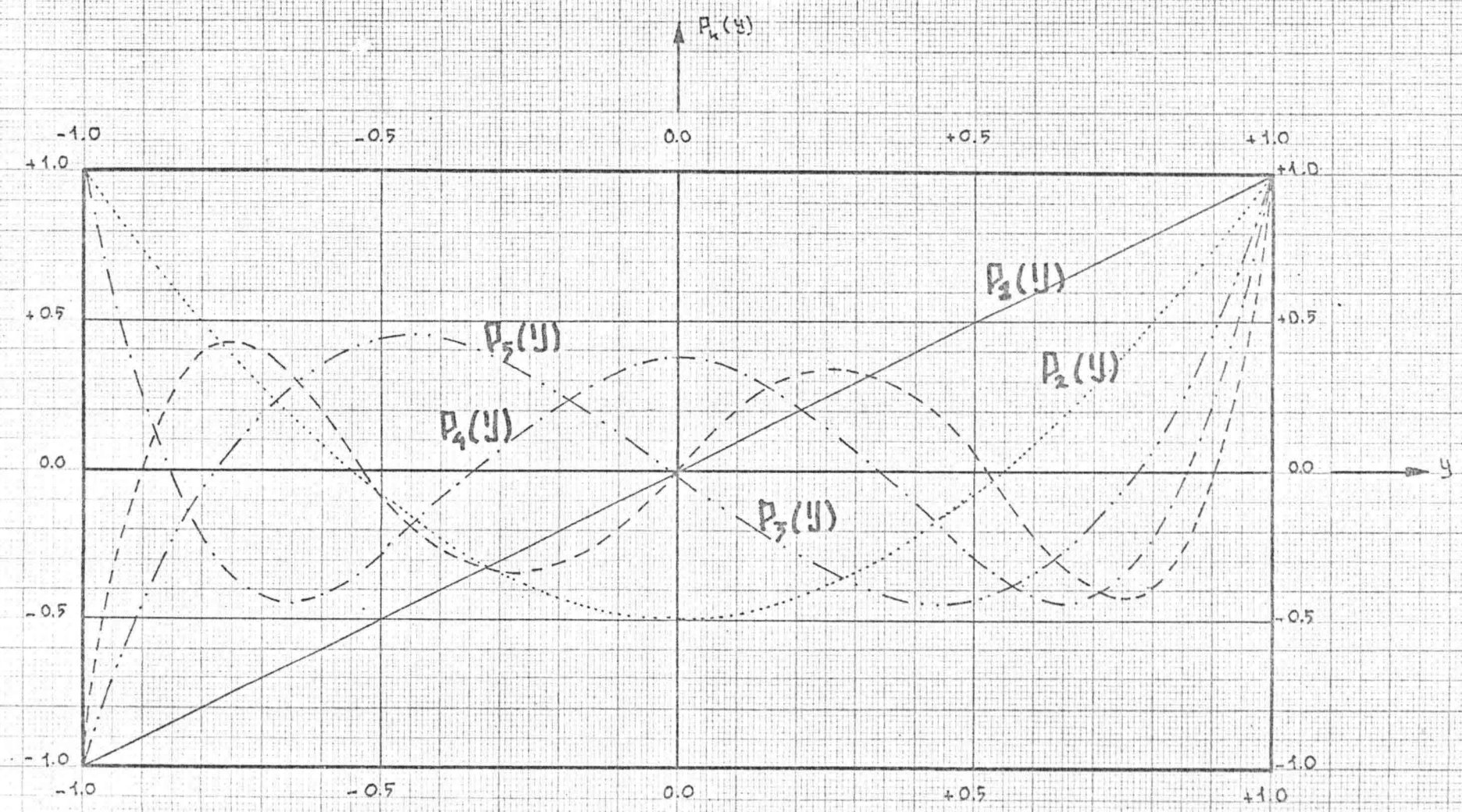


CRD:9520

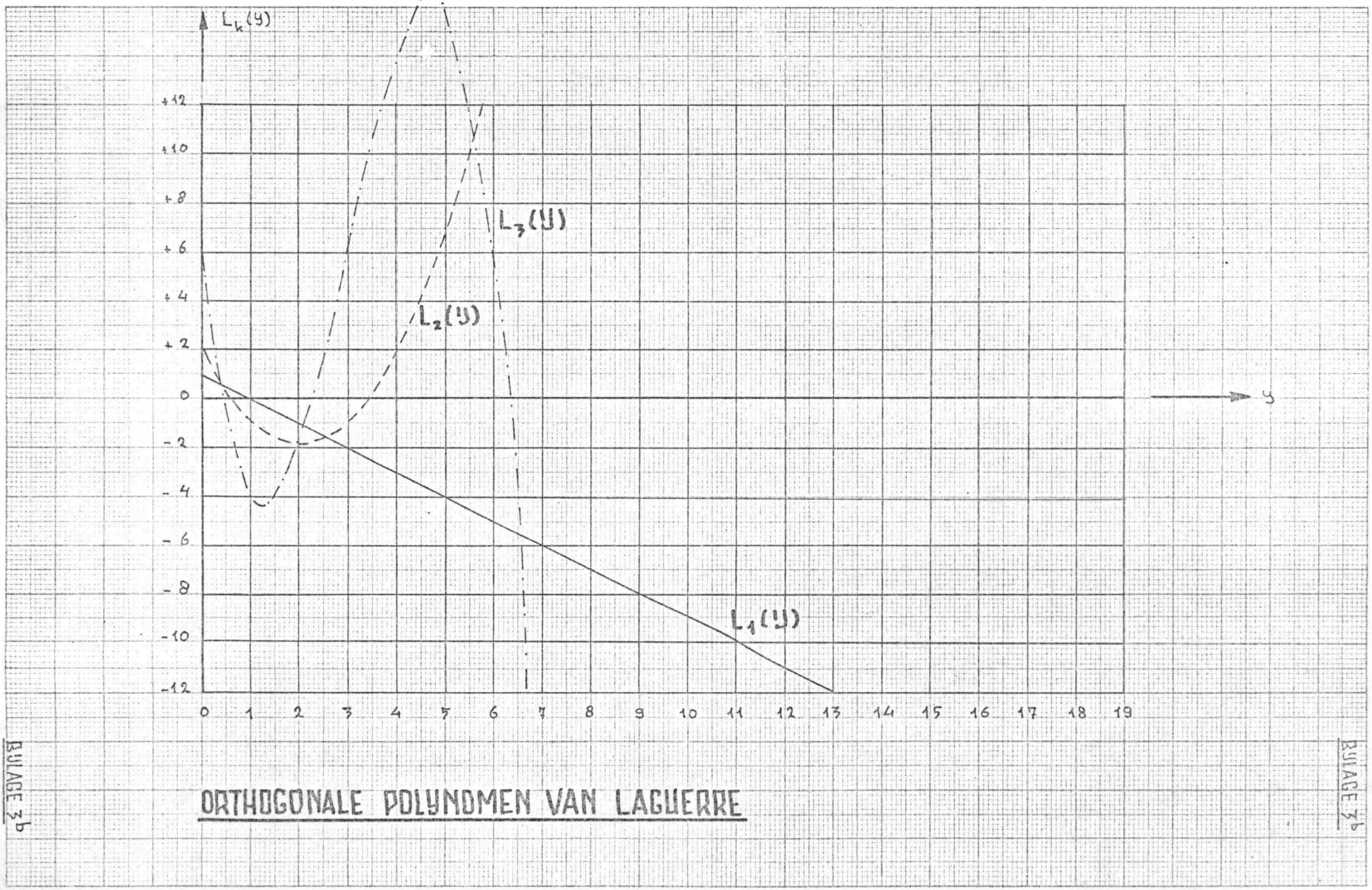




ORTHOGONALE POLYNOMEN VAN LEGENDRE.

BIJLAGE 3a

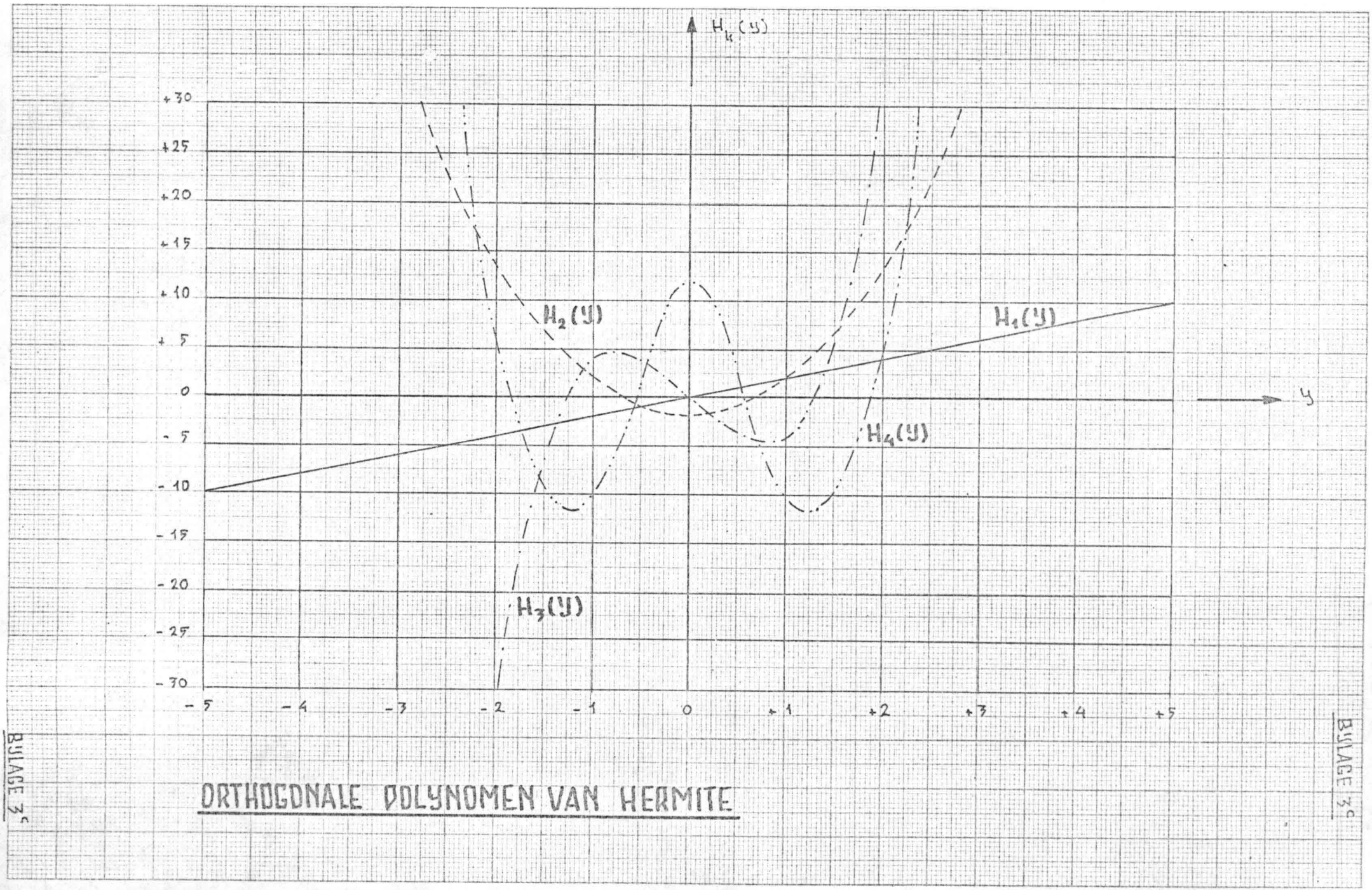
BIJLAGE 3a



ORTHOGONALE POLYNOMEN VAN LAGUERRE

BIJLAGE 3b

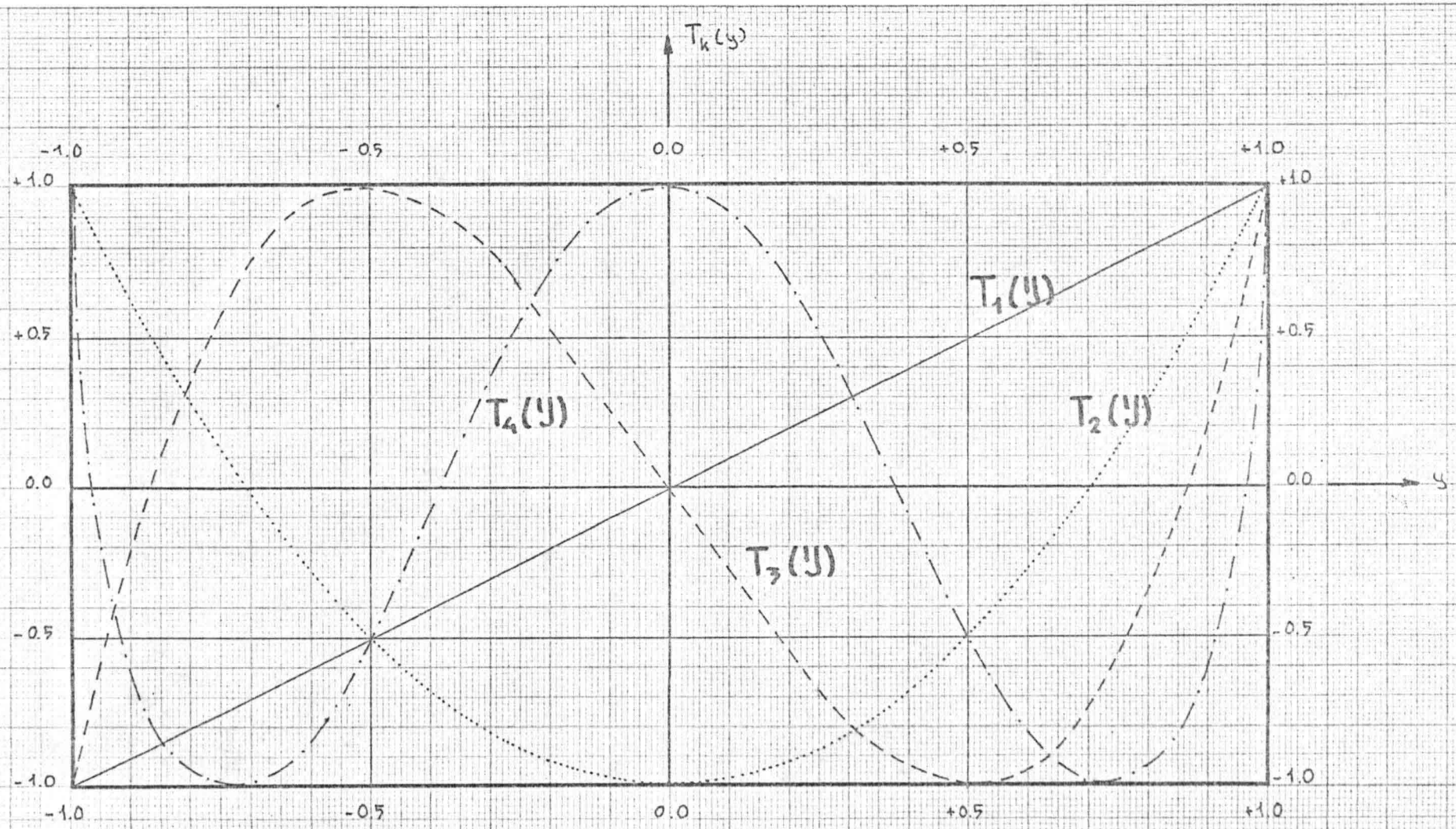
BIJLAGE 3b



ORTHOGONALE POLYNOMEN VAN HERMITE

BIJLAGE 3c

BIJLAGE 3c



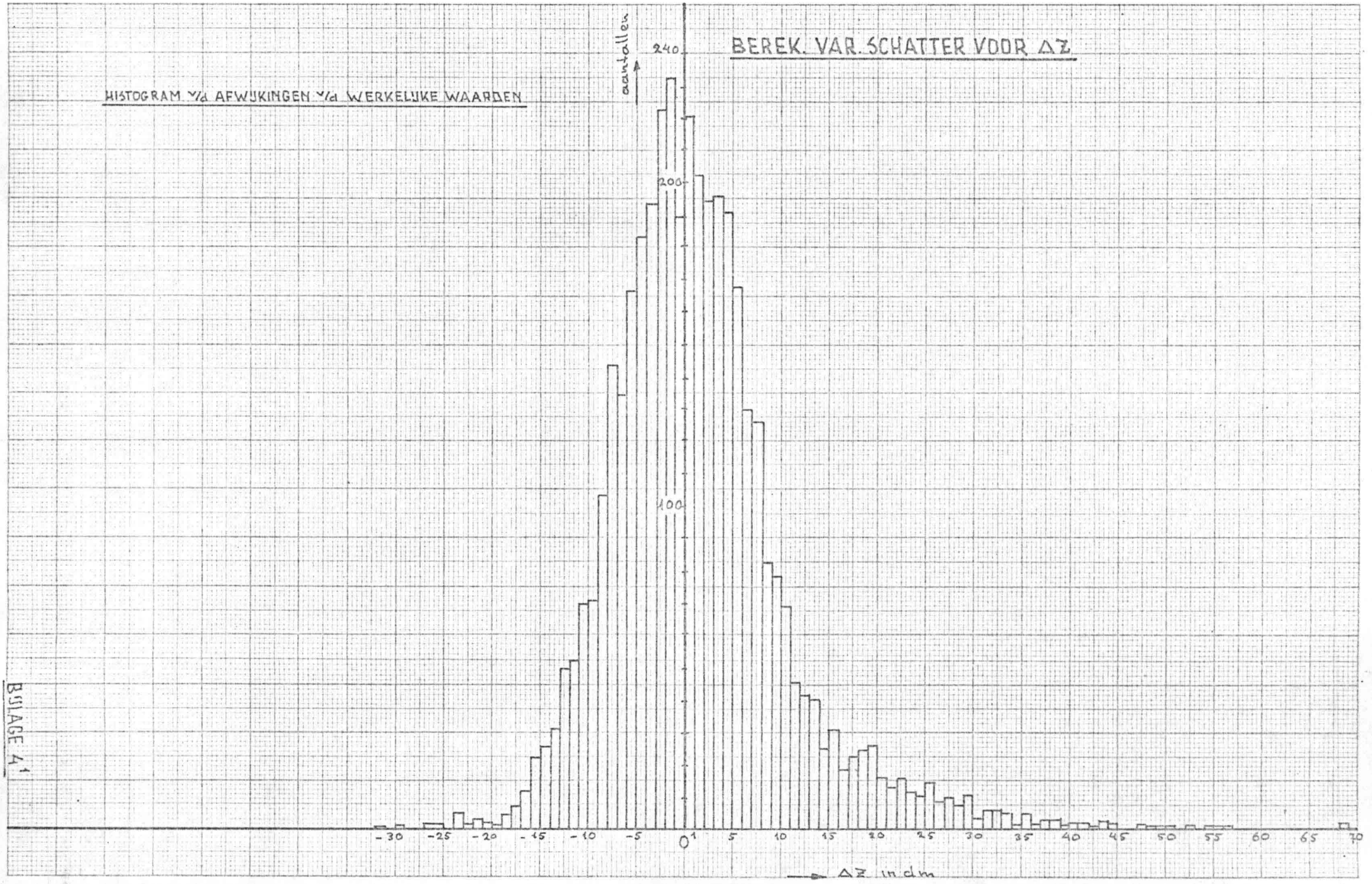
ORTHOGONALE POLYNOMEN VAN TSEBYSJEV.

BIJLAGE 7d

BIJLAGE 7d

BIJLAGE 4.1

HISTOGRAM V/d AFWIJKINGEN V/d WERKELIJKE WAARDEN



TOTAAL AANTAL WAARNEMINGEN : 4009

KLASSE		AANTAL
68	< 69	2
67	< 68	0
66	< 67	0
65	< 66	0
64	< 65	0
63	< 64	0
62	< 63	0
61	< 62	0
60	< 61	0
59	< 60	0
58	< 59	0
57	< 58	0
56	< 57	1
55	< 56	1
54	< 55	1
53	< 54	0
52	< 53	1
51	< 52	0
50	< 51	1
49	< 50	1
48	< 49	1
47	< 48	2
46	< 47	0
45	< 46	0
44	< 45	2
43	< 44	3
42	< 43	1
41	< 42	2
40	< 41	2
39	< 40	1

$\Sigma = 22$

KLASSE		AANTAL
38	< 39	3
37	< 38	3
36	< 37	2
35	< 36	4
34	< 35	1
33	< 34	5
32	< 33	6
31	< 32	6
30	< 31	3
29	< 30	10
28	< 29	7
27	< 28	9
26	< 27	8
25	< 26	14
24	< 25	10
23	< 24	11
22	< 23	15
21	< 22	13
20	< 21	15
19	< 20	25
18	< 19	24
17	< 18	22
16	< 17	18
15	< 16	30
14	< 15	24
13	< 14	40
12	< 13	41
11	< 12	45
10	< 11	68
9	< 10	78

$\Sigma = 560$

KLASSE		AANTAL
8	< 9	82
7	< 8	125
6	< 7	129
5	< 6	167
4	< 5	190
3	< 4	195
2	< 3	194
1	< 2	202
0	< 1	222
< 0	-1	189
< -1	-2	232
< -2	-3	222
< -3	-4	193
< -4	-5	182
< -5	-6	166
< -6	-7	134
< -7	-8	143
< -8	-9	103
< -9	-10	70
< -10	-11	69
< -11	-12	52
< -12	-13	49
< -13	-14	31
< -14	-15	25
< -15	-16	22
< -16	-17	11
< -17	-18	7
< -18	-19	4
< -19	-20	1
< -20	-21	2

$\Sigma = 3413$

KLASSE		AANTAL
< -21	-22	3
< -22	-23	2
< -23	-24	5
< -24	-25	6
< -25	-26	1
< -26	-27	1
< -27	-28	0
< -28	-29	0
< -29	-30	1
< -30	-31	0
< -31	-32	1

BIJLAGE 4.2

Schatting van de $\overline{\Delta z}$ en van de variantie van Δz

$$\overline{\Delta z} = \frac{\sum_{j=1}^{m} f_j \Delta z'_j}{\sum_{j=1}^{m} f_j}$$; waarin $\Delta z'_j$ de klassemiddens zijn

variantie:

$$s^2 = \frac{\sum_{j=1}^{m} f_j (\Delta z_j - \overline{\Delta z})^2}{(\sum_{j=1}^{m} f_j) - 1}$$

passen we op de waarnemingen de volgende transformatie toe:

stel: $y = \frac{\Delta z'}{5}$ dan volgt daaruit: $\overline{\Delta z} = 5\,\bar{y}$

$$s^2_{\Delta z} = 25\, s^2_y$$

$$\left.\begin{array}{l} \Sigma f_j = 4009 \\ \Sigma f_j y = 647{,}1 + 2541{,}5 - 2144{,}9 = +1043{,}7 \end{array}\right\} \Rightarrow \bar{y} = \frac{+1043{,}7}{4009} = \underline{\underline{0{,}26}}$$

$$\Rightarrow \overline{\Delta z} = 5 * 0{,}26 = \underline{\underline{1{,}3 \text{ dm}}}$$

$$(4009 - 1)\, s_y^2 = 13965{,}96 - \frac{1043{,}7^2}{4009} = 13965{,}96 - 271{,}71 = 13694{,}25$$

$$\Rightarrow s_y^2 = \frac{13694{,}25}{4008} \qquad \Rightarrow s^2_{\Delta z} = 25 * \frac{13694{,}25}{4008} = \underline{\underline{85{,}3}}$$

Δz_j	y	y^2	f_j	$f_i * y$	$f_i * y^2$
65,5	13,1	171,61	2	26,2	343,22
56,5	11,3	127,69	1	11,3	127,69
55,5	11,1	123,21	1	11,1	123,21
54,5	10,9	118,81	1	10,9	118,81
52,5	10,5	110,25	1	10,5	110,25
50,5	10,1	102,01	1	10,1	102,01
49,5	9,9	98,01	1	9,9	98,01
48,5	9,7	94,09	1	9,7	94,09
47,5	9,5	90,25	2	19,0	180,50
44,5	8,9	79,21	2	17,8	158,42
43,5	8,7	75,69	3	26,1	227,07
42,5	8,5	72,25	1	8,5	72,25
41,5	8,3	68,89	2	16,6	137,78
40,5	8,1	65,61	2	16,2	131,22
39,5	7,9	62,41	1	7,9	62,41
38,5	7,7	59,29	3	23,1	177,87
37,5	7,5	56,25	3	22,5	168,75
36,5	7,3	53,29	2	14,6	106,58
35,5	7,1	50,41	4	28,4	201,64
34,5	6,9	47,61	1	6,9	47,61
33,5	6,7	44,89	5	33,5	224,45
32,5	6,5	42,25	6	39,0	253,50
31,5	6,3	39,69	6	37,8	238,14
30,5	6,1	37,21	3	18,3	111,63
29,5	5,9	34,81	10	59,0	348,10
28,5	5,7	32,49	7	39,9	227,43
27,5	5,5	30,25	9	49,5	272,25
26,5	6,3	28,09	8	42,4	224,72
25,5	5,1	26,01	4	20,4	104,04
			Σ	647,1	4593,65

Δz_i	y	y^2	f_i	$f_i * y$	$f_i * y^2$
24,5	4,9	24,01	10	49,0	240,10
23,5	4,7	22,09	11	51,7	242,99
22,5	4,5	20,25	15	67,5	303,75
21,5	4,3	18,49	13	55,9	230,37
20,5	4,1	16,81	15	61,5	252,15
19,5	3,9	15,21	25	97,5	381,25
18,5	3,7	13,69	24	88,8	328,56
17,5	3,5	12,25	22	77,0	269,50
16,5	3,3	10,89	18	59,4	196,02
15,5	3,1	9,61	30	93,0	288,30
14,5	2,9	8,41	24	69,6	201,84
13,5	2,7	7,29	40	108,0	291,60
12,5	2,5	6,25	41	102,5	256,25
11,5	2,3	5,29	45	103,5	238,05
10,5	2,1	4,41	68	142,8	299,28
9,5	1,9	3,61	78	148,2	281,58
8,5	1,7	2,89	82	139,4	253,98
7,5	1,5	2,25	125	187,5	281,25
6,5	1,3	1,69	129	167,7	218,01
5,5	1,1	1,21	167	183,7	202,07
4,5	0,9	0,81	190	171,0	153,90
3,5	0,7	0,49	195	136,5	95,55
2,5	0,5	0,25	194	97,0	48,50
1,5	0,3	0,09	202	60,6	18,18
0,5	0,1	0,01	222	22,2	2,22
			Σ	2541,5	5575,25

Δz	y	y^2	f_i	$f_i * y$	$f_i * y^2$
- 0,5	- 0,1	0,01	189	- 18,9	1,89
- 1,5	- 0,3	0,09	232	- 69,6	20,88
- 2,5	- 0,5	0,25	222	- 111,0	55,50
- 3,5	- 0,7	0,49	193	- 135,1	94,57
- 4,5	- 0,9	0,81	182	- 163,8	147,42
- 5,5	- 1,1	1,21	166	- 182,6	200,89
- 6,5	- 1,3	1,69	134	- 174,2	226,46
- 7,5	- 1,5	2,25	143	- 214,5	321,75
- 8,5	- 1,7	2,89	103	- 175,1	297,67
- 9,5	- 1,9	3,61	70	- 133,0	252,70
- 10,5	- 2,1	4,41	69	- 144,9	304,29
- 11,5	- 2,3	5,29	52	- 119,6	275,08
- 12,5	- 2,5	6,25	49	- 122,5	306,25
- 13,5	- 2,7	7,29	31	- 83,7	225,99
- 14,5	- 2,9	8,41	25	- 72,5	210,25
- 15,5	- 3,1	9,61	22	- 68,2	211,42
- 16,5	- 3,3	10,89	11	- 36,3	119,79
- 17,5	- 3,5	12,25	7	- 24,5	85,75
- 18,5	- 3,7	13,69	4	- 14,8	54,86
- 19,5	- 3,9	15,21	1	- 3,9	15,21
- 20,5	- 4,1	16,81	2	- 8,2	33,62
- 21,5	- 4,3	18,49	3	- 12,9	55,47
- 22,5	- 4,5	20,25	2	- 9,0	40,50
- 23,5	- 4,7	22,05	5	- 23,5	110,25
- 25,5	- 5,1	26,01	1	- 5,1	26,01
- 26,5	- 5,3	28,09	1	- 5,3	28,09
- 29,5	- 5,9	34,81	1	- 5,9	34,81
- 31,5	- 6,3	39,69	1	- 6,3	39,69
				Σ	3797,06
					5575,25 (4^5)
					4593,65 (4^4)
			Σ	- 2144,9	13965,96

BYLAGE 4^6

```
 SC     SOURCE STATEMENT

00000   'BEGIN''REAL'CRD,SOM,ZG,S0,S1,S2,S3,S4,S5,S6,S7,K1,K2,K3,K4,K5,  Q,E,F, WAA01E00
00000        D,H,S8,B,T,V,VAR,U,W,V1,V2,V3,V4,V5,V6,V7,DD,B1,SSD,BERZ,AFW,      WAA01F00
00000     VAR1,VAR2,VAR3,VAR4,VAR5,VAR6,VARA;                                   WAA01F10
00001    'INTEGER'P,S,I,J,M,L,PD,K,TV;                                          WAA01G00
00002   'PROCEDURE'INVGAU(A,N,EPS,SINGULIER);'VALUE'N;'INTEGER'N;'REAL'EPS;     WAA01H00
00006    'ARRAY'A;'LABEL'SINGULIER;'CODE';                                      WAA01I00
00009     'PROCEDURE'LINE(D,T);'VALUE'D,T;'INTEGER'D,T;'CODE';                  WAA01J00
00013  'PROCEDURE'BLANK(D,N);'VALUE'D,N;'INTEGER'D,N;'CODE';                    WAA01J10
00017     'PROCEDURE'FIX(D,M,N,X);'VALUE'D,M,N,X;'INTEGER'D,M,N;               WAA01K00
00020                 'REAL'X;'CODE';                                          WAA01L00
00022     'PROCEDURE'FLO(D,M,N,X);'VALUE'D,M,N,X;'INTEGER'D,M,N;               WAA01M00
00025                 'REAL'X;'CODE';                                          WAA01M00
00027     'PROCEDURE'INVATA(A,D,M,N,EPS,LAB);'VALUE'M,N,EPS;'INTEGER'M,N;      WAA31N10
00030                 'REAL'D,EPS;'ARRAY'A;'LABEL'LAB;'CODE';                  WAA31N20
00034     'PROCEDURE'MATVSL(A,B,C);'ARRAY'A,B,C;'CODE';                        WAA01N30
00037     M:=40;ININTEGER(0,S);ININTEGER(0,PD);                                WAA01O00
00040   ININTEGER(0,TV);                                                       WAA01O10
00041   VAR1:=VAR2:=VAR3:=VAR4:=VAR5:=VAR6:=0;                                 WAA01O20
00042    'BEGIN''REAL''ARRAY'G(/1:40/),     C(/1:S+1,1:6/),R(/0:S+TV/),        WAA01P00
00042         EE(/1:6,1:6/),AA(/1:6,1:PD+1/),KRI(/1:PD+1,1:PD+1/),             WAA01Q00
00042         VARG(/1:6/);                                                     WAA01Q10
00043   'REAL''PROCEDURE'P2(Y);'REAL'Y;P2:=1/2*(3*Y*Y-1);                      WAA01R00
00046   'REAL''PROCEDURE'P3(Y);'REAL'Y;P3:=1/2*(5*Y*Y*Y-3*Y);                  WAA01S00
00049   'REAL''PROCEDURE'P4(Y);'REAL'Y;P4:=1/8*(35*Y*Y*Y*Y-30*Y*Y+3);          WAA01T00
00052   'REAL''PROCEDURE'P5(Y);'REAL'Y;P5:=1/8*(63*Y*Y*Y*Y*Y-70*Y*Y*Y+15*Y);  WAA01T10
00055        'FOR'P:=1'STEP'1'UNTIL'S'DO'                                      WAA01U00
00055         'BEGIN'INREAL(0,CRD);INREAL(0,B);INREAL(0,F);R(/P/):=B/F;        WAA01V00
00059           SOM:=S0:=S1:=S2:=S3:=S4:=S5:=S6:=S7:=K1:=K2:=K3:=K4:=K5:=0;    WAA01W00
00060            M:=1;                                                         WAA01X00
00061        WEER:INREAL(0,V1):G(/ M/):=V1/(10*B);                             WAA01Y00
00063           'IF'G(/  M/)<15/B'THEN'                                        WAA01Z00
00063               'BEGIN'M:=M+1;'GOTO'WEER;                                  WAA02A00
00065               'END';                                                     WAA02B00
00066           M:=M-1;INREAL(0,H);ININTEGER(0,L);                             WAA02C00
00069           'IF'M>=L'THEN''BEGIN'OUTSTRING(1,'('FOUT IN CRD:')');          WAA02C10
00070                              FIX(1,4,0,CRD);OUTSTRING(1,'('M=L')');      WAA02C20
00072                              LINE(1,2);                                  WAA02C21
00073                          'END';                                          WAA02C30
00074     'BEGIN''REAL''ARRAY'Y(/1:M/),Z(/1:M,1:1/),ZT(/1:1,1:M/),             WAA02C31
00074      PP(/1:M,1:6/),PPT(/1:6,1:M/),CC(/1:6,1:M/),EE(/1:6,1:1/),           WAA02C32
00074   EET(/1:1,1:6/),SS1(/1:1,1:1/),SS2(/1:1,1:1/),SS(/1:1,1:M/);            WAA02C33
00075   'FOR'I:=1'STEP'1'UNTIL'M'DO'Z(/I,1/):=G(/I/);                          WAA02C34
00076           'IF'H<20'THEN'                                                 WAA02D00
00076           'BEGIN'Y(/  1/):=1;Y(/  M/):=-1;                               WAA02D10
00078              'FOR'I:=2'STEP'1'UNTIL'M-1'DO'                              WAA02D20
00078              Y(/  I/):=1-H/(1/2*B)     -10/(1/2*B)     *(I-2);           WAA02D30
```

BJLAGE 5 a1

```
00079            'END'                                                          WAA02D40
00079            'ELSE''BEGIN''FOR'I:=1'STEP'1'UNTIL'M-1'DO'                    WAA02D50
00079            Y(/  I/):=1-10/(1/2*B)      *(I-1);Y(/  M/):=-1;'END';         WAA02D60
00082          'FOR'I:=1'STEP'1'UNTIL'M'DO'                                     WAA02D70
00082            'BEGIN'                                                        WAA02E00
00082               PP(/I,1/):=1;                                               WAA02F00
00083               PP(/I,2/):=Y(/I/);                                          WAA02G00
00084               PP(/I,3/):=P2(Y(/I/));                                      WAA02H00
00085               PP(/I,4/):=P3(Y(/I/));                                      WAA02I00
00086               PP(/I,5/):=P4(Y(/I/));                                      WAA02J00
00087               PP(/I,6/):=P5(Y(/I/));                                      WAA02K00
00088            'END';                                                         WAA02L00
00089            'FOR'I:=1'STEP'1'UNTIL'6'DO'                                   WAA02M00
00089            'FOR'J:=1'STEP'1'UNTIL'M'DO'                                   WAA02N00
00089               PPT(/I,J/):=PP(/J,I/);                                      WAA02O00
00090            INVATA(PP,DD,M,6,'-20,LAB)  ;                                  WAA02P00
00091  'COMMENT'DOOR INVATA OORSPR. PP VERLOREN;                                WAA02P10
00091  'FOR'I:=1'STEP'1'UNTIL'6'DO'                                             WAA02P20
00091  'FOR'J:=1'STEP'1'UNTIL'6'DO'  EE(/I,J/):=PP(/I,J/);                      WAA02P30
00092            MATVSL(EE,PPT,CC);                                             WAA02Q00
00093            MATVSL(CC,Z,EE);                                               WAA02R00
00094            'FOR'I:=1'STEP'1'UNTIL'6'DO'                                   WAA02S00
00094               'BEGIN'B1:=EE(/I,1/); C(/P,I/):=B1;'END';                   WAA02S10
00097  'FOR'I:=1'STEP'1'UNTIL'M'DO'ZT(/1,I/):=Z(/I,1/);                         WAA02X00
00098  'FOR'I:=1'STEP'1'UNTIL'6'DO'EET(/1,I/):=EE(/I,1/);                       WAA02Y00
00099  MATVSL(ZT,Z,SS1);                                                        WAA02Z00
00100  MATVSL(EET,PPT,SS );                                                     WAA03A00
00101  MATVSL(SS,Z,SS2);                                                        WAA03A10
00102  SSD:=1/(M-6)*(SS1(/1,1/)-SS2(/1,1/));                                    WAA03B00
00103  VAR1:=VAR1+EE(/1,1/)*SSD;                                                WAA03C00
00104  VAR2:=VAR2+EE(/2,2/)*SSD;                                                WAA03D00
00105  VAR3:=VAR3+EE(/3,3/)*SSD;                                                WAA03E00
00106  VAR4:=VAR4+EE(/4,4/)*SSD;                                                WAA03F00
00107  VAR5:=VAR5+EE(/5,5/)*SSD;                                                WAA03G00
00108  VAR6:=VAR6+EE(/6,6/)*SSD;                                                WAA03H00
00109  'END';                                                                   WAA03I00
00110  'END';                                                                   WAA03J00
00111  VARG(/1/):=VAR1/S;                                                       WAA03K00
00112  VARG(/2/):=VAR2/S;                                                       WAA03L00
00113  VARG(/3/):=VAR3/S;                                                       WAA03M00
00114  VARG(/4/):=VAR4/S;                                                       WAA03N00
00115  VARG(/5/):=VAR5/S;                                                       WAA03O00
00116  VARG(/6/):=VAR6/S;                                                       WAA03P00
00117  OUTSTRING(1,'('DE OVER S GEM. VARIANTIES VOOR C WORDEN RESP.:')');       WAA03Q00
00118  LINE(1,2);OUTARRAY(1,VARG);LINE(1,5);                                    WAA03R00
00121  OUTARRAY(2,VARG);                                                        WAA03S00
00122  'BEGIN''REAL''ARRAY'RR(/1:(S-P0+1),1:(P0+1)/),CE(/1:(S-P0+1),1:1/),      WAA04B00
00122    A(/1:(P0+1),1:1/),RRT(/1:(P0+1),1:(S-P0+1)/),                          WAA04C00
```

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SC    SOURCE STATEMENT
00122       RRP(/1:(P0+1),1:(S-P0+1)/),VAR1(/1:1,1:(P0+1)/),RP(/1:(P0+1),1:1/), WAA04D00
00122     RPT(/1:1,1:(P0+1)/),VARC(/1:1,1:1/);                                  WAA04E00
00123     'FOR'I:=1'STEP'1'UNTIL'S-P0+1'DO'RR(/I,1/):=1;                        WAA04G00
00124     'FOR'I:=1'STEP'1'UNTIL'S-P0+1'DO'                                     WAA04H00
00124     'FOR'J:=2'STEP'1'UNTIL'P0+1'DO'                                       WAA04I00
00124        RR(/I,J/):=R(/(I+P0-1)-J+2/);                                      WAA04J00
00125 'COMMENT'DE NORMAALVERGELIJKINGEN VAN DE REGRESSIEVERGEL:CE=RR*A,ZIJN:    WAA04K00
00125          A=(RRT*RR)**(-1)*RRT*CE;                                         WAA04L00
00125     'FOR'I:=1'STEP'1'UNTIL'S-P0+1'DO'                                     WAA04M00
00125     'FOR'J:=1'STEP'1'UNTIL'P0+1'DO'                                       WAA04N00
00125        RRT(/J,I/):=RR(/I,J/);                                             WAA04O00
00126 INVATA(RR,DD,S-P0+1,P0+1,'-20,LAB);'COMMENT'HIERDOOR GAAN RR,RR VERLOREN; WAA04P00
00127     'FOR'I:=1'STEP'1'UNTIL'P0+1'DO'                                       WAA04Q00
00127     'FOR'J:=1'STEP'1'UNTIL'P0+1'DO'                                       WAA04R00
00127        RRI(/I,J/):=RR(/I,J/);                                             WAA04S00
00128 MATVSL(RRI,RRT,RRR);                                                      WAA04T00
00129 'COMMENT'RRI IS DE COV. MATRIX VAN A,VOOR ALLE A'S HETZELFDE;             WAA04T10
00129 'FOR'K:=1'STEP'1'UNTIL'6'DO'                                              WAA04T20
00129 'BEGIN'                                                                   WAA04T30
00129     'FOR'I:=1'STEP'1'UNTIL'S-P0+1'DO'CE(/I,1/):=C(/I+P0-1,K/);           WAA04T40
00130 MATVSL(RRR,CE,A);                                                         WAA04U00
00131 OUTSTRING(1,'('DE KOEFF VOOR C(/N,')');OUTINTEGER(1,K);                   WAA04V00
00133 OUTSTRING(1,'('/) WORDEN:')');LINE(1,4);                                  WAA04W00
00135 OUTARRAY(1,A);LINE(1,2);                                                  WAA04X00
00137 'FOR'I:=1'STEP'1'UNTIL'(P0+1)'DO'                                         WAA05A00
00137 AA(/K,I/):=A(/I,1/);                                                      WAA05B00
00138 'COMMENT'DEZE TOEKENNING IS OM DE WAARDE VAN A(/I,1/) BUITEN HET BLOCK    WAA05C00
00138 WAARBINNEN A IS GEDECLAREERD,TE BEHOUDEN;                                 WAA05D00
00138 'END';                                                                    WAA05D10
00139 'END';                                                                    WAA05E00
00140 OUTSTRING(1,'('DE GESCHATTE VARIANTIES VOOR A WORDEN RESP.:')');          WAA35H00
00141 LINE(1,2);                                                                WAA35I00
00142 'FOR'I:=1'STEP'1'UNTIL'6'DO'                                              WAA35J00
00142 'FOR'J:=1'STEP'1'UNTIL'P0+1'DO'                                           WAA35K00
00142 'BEGIN'VARA:=RRI(/J,J/)*VARC(/I/);                                        WAA35L00
00143    OUTREAL(1,VARA);LINE(1,1);                                             WAA05M00
00145 'END';                                                                    WAA35N00
00146 LINE(1,10);                                                               WAA06A00
00147 OUTSTRING(1,'('DE MATRIX A(/1:6,1:P0+1/) WORDT')');LINE(1,2);             WAA06A01
00149 OUTARRAY(1,AA);LINE(1,10);                                                WAA06A10
00151 OUTARRAY(2,AA);                                                           WAA06A11
00152 OUTSTRING(1,'('DE COV.MATRIX VOOR A WORDT:')');LINE(1,2);                 WAA06A20
00154 OUTARRAY(1,RRI);LINE(1,10);                                               WAA06A30
00156 OUTARRAY(2,RRI);                                                          WAA06A31
00157 OUTSTRING(1,'('M.B.V. GEVONDEN A-KOEFF. Z-WAARDEN BEREKENEN VAN DE NOG    WAA06B00
00157 NIET GEBRUIKTE DWARSPROFIELEN')');LINE(1,8);                              WAA06C00
00159 'COMMENT' TVIS AANTAL NIET GEBRUIKTE DWARSPROFIELEN;                      WAA06D00
00159 'BEGIN''REAL''ARRAY'CC(/1:6,1:1/),RR(/1:P0+1,1:1/);                       WAA06E00
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BIJLAGE 5a3

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SC    SOURCE STATEMENT

00150     'FOR'K:=1'STEP'1'UNTIL'TV'DO'                                                    WAA06F00
00160     'BEGIN'S:=S+1;                                                                   WAA06G00
00161               INREAL(0,CRD);INREAL(0,B);INREAL(0,F);R(/S/):=B/F;                     WAA06I00
00165           M:=1;                                                                      WAA06J00
00166      OPN: INREAL(0,V1);G(/ M/):=V1;                                                  WAA06K00
00168          'IF'G(/  M/)<150 'THEN'                                                     WAA06K10
00168             'BEGIN'M:=M+1;'GOTO'OPN;                                                 WAA06K20
00170             'END';                                                                   WAA06K30
00171           M:=M-1;INREAL(0,H);ININTEGER(0,L);                                         WAA06K40
00174           'IF'M¬=L'THEN''BEGIN'OUTSTRING(1,'('FOUT IN CRD:')');                      WAA06K50
00175                              FIX(1,4,0,CRD);OUTSTRRING(1,'('M#L')');                 WAA06L00
00177                              LINE(1,2);                                              WAA06L10
00178                            'END';                                                    WAA06L20
00179       'BEGIN''REAL''ARRAY'Z(/1:M,1:1/),Y(/1:M/);                                     WAA06M00
00180 'FOR'I:=1'STEP'1'UNTIL'M'DO'Z(/I,1/):=G(/I/);                                       WAA06N00
00181           'IF'H<20'THEN'                                                           WAA06O00
00181           'BEGIN'Y(/  1/):=1;Y(/  M/):=-1;                                         WAA06P00
00183              'FOR'I:=2'STEP'1'UNTIL'M-1'DO'                                        WAA06Q00
00183              Y(/  I/):=1-H/(1/2*B)      -10/(1/2*B)      *(I-2);                   WAA06R00
00184           'END'                                                                    WAA06S00
00184           'ELSE''BEGIN''FOR'I:=1'STEP'1'UNTIL'M-1'DO'                              WAA06T00
00184              Y(/  I/):=1-10/(1/2*B)      *(I-1);Y(/  M/):=-1;'END';                WAA06T10
00187 LINE(1,4);                                                                         WAA06T11
00188           FIX(1,4,0,CRD);FIX(1,3,0,B);                                             WAA06T20
00190           RR(/1,1/):=1;                                                            WAA06J00
00191           'FOR'I:=2'STEP'1'UNTIL'P0+1'DO'                                          WAA06V00
00191              RR(/I,1/):=R(/S-I+2/);                                                WAA06W00
00192           MATVSL(AA,RR,CC);                                                        WAA06X00
00193           OUTSTRING(1,'('DE BEREK. C-WAARDEN:')');LINE(1,2);                       WAA06Y00
00195         OUTARRAY(1,CC);LINE(1,2);                                                  WAA06Z00
00197           OUTSTRING(1,'('Z OORSPR.-Z BEREK.WORDT:')');LINE(1,2);                   WAA07A00
00199           'FOR'I:=1'STEP'1'UNTIL'M'DO'                                             WAA07B00
00199           'BEGIN'BERZ:=CC(/1,1/)+CC(/2,1/)*Y(/I/)+CC(/3,1/)*P2(Y(/I/))+            WAA07C00
00199                      CC(/4,1/)*P3(Y(/I/))+CC(/5,1/)*P4(Y(/I/))+                    WAA07D00
00199                      CC(/6,1/)*P5(Y(/I/));                                         WAA07E00
00200              AFW:=Z(/I,1/)-BERZ*10*B;                                              WAA07F00
00201              OUTREAL(1,AFW);LINE(1,1);                                             WAA07G00
00203           'END';                                                                   WAA07H00
00204       'END';                                                                       WAA07I00
00205    'END';                                                                          WAA07J00
00206 'END';                                                                             WAA07K00
00207       'END';                                                                       WAA03Z10
00208 LAB:  OUTSTRING(1,'('INVATA')'); LINE(1,8);                                        WAA05F00
00210 'END'                                                                              WAA05G00
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BIJLAGE 5 q 4

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SC    SOURCE STATEMENT
00000 'BEGIN''REAL'CRD,SOM,ZG,S0,S1,S2,S3,S4,S5,S6,S7,K1,K2,K3,K4,K5,  Q,E,F, WAA01E00
00000       D,I,S8,B,T,V,VAR,U,W,V1,V2,V3,V4,V5,V6,V7,DD,B1,SSD,BERZ,AFW,     WAA01F00
00000     VAR1,VAR2,VAR3,VAR4,VAR5,VAR6,VARA,QQ,                              WAA01F10
00000 SS8,DELTA,                                                              WAA01F11
00000 VARZ,BOVENGR,ONDERGR;                                                   ***01F20
00001   'INTEGER'P,S,I,J,M,L,P0,K,TV,NO;                                      WAA01G00
00002  'PROCEDURE'INVGAU(A,N,EPS,SINGULIER);'VALUE'N;'INTEGER'N;'REAL'EPS;    WAA01H00
00005    'ARRAY'A;'LABEL'SINGULIER;'CODE';                                    WAA01I00
00009     'PROCEDURE'LINE(D,N);'VALUE'D,N;'INTEGER'D,N;'CODE';                WAA01J00
00013 'PROCEDURE'BLANK(D,N);'VALUE'D,N;'INTEGER'D,N;'CODE';                   WAA01J10
00017    'PROCEDURE'FIX(D,M,N,X);'VALUE'D,M,N,X;'INTEGER'D,M,N;               WAA01K00
00020              'REAL'X;'CODE';                                            WAA01L00
00022    'PROCEDURE'FLO(D,M,N,X);'VALUE'D,M,N,X;'INTEGER'D,M,N;               WAA01M00
00025              'REAL'X;'CODE';                                            WAA01N00
00027    'PROCEDURE'INVATA(A,D,M,N,EPS,LAB);'VALUE'M,N,EPS;'INTEGER'M,N;      WAA31N10
00030              'REAL'D,EPS;'ARRAY'A;'LABEL'LAB;'CODE';                    WAA31N20
00034    'PROCEDURE'MATVSL(A,B,C);'ARRAY'A,B,C;'CODE';                        WAA01N30
00037    M:=40;ININTEGER(0,S);ININTEGER(0,P0);                                WAA01O00
00040 ININTEGER(0,TV);                                                        WAA01O10
00041 VAR1:=VAR2:=VAR3:=VAR4:=VAR5:=VAR6:=0;                                  WAA01O20
00042   'BEGIN''REAL''ARRAY'G(/1:40/),     C(/1:S+1,1:6/),R(/0:S+TV/),        WAA01P00
00042       FF(/1:6,1:6/),AA(/1:6,1:P0+1/),RRI(/1:P0+1,1:P0+1/),              WAA01Q00
00042       VARG(/1:6/),                                                      WAA01Q10
00042 VAR7(/1:6/);                                                            ***01Q20
00043 'REAL''PROCEDURE'P2(Y);'REAL'Y;P2:=1/2*(3*Y*Y-1);                       WAA01R00
00046 'REAL''PROCEDURE'P3(Y);'REAL'Y;P3:=1/2*(5*Y*Y*Y-3*Y);                   WAA01S00
00049 'REAL''PROCEDURE'P4(Y);'REAL'Y;P4:=1/8*(35*Y*Y*Y*Y-30*Y*Y+3);           WAA01T00
00052 'REAL''PROCEDURE'P5(Y);'REAL'Y;P5:=1/8*(63*Y*Y*Y*Y*Y-70*Y*Y*Y+15*Y);   WAA01T10
00055 NO:=0;DELTA:=0;                                                         
00057 INARRAY(0,VARG);INARRAY(0,AA);INARRAY(0,RRI);                           ***06A40
00060      'FOR'P:=1'STEP'1'UNTIL'S'DO'                                       WAA01U00
00060       'BEGIN'INREAL(0,CRD);INREAL(0,B);INREAL(0,F);                     WAA01V00
00063         R(/P/):=B/F;                                                    WAA01V10
00064        SOM:=S0:=S1:=S2:=S3:=S4:=S5:=S6:=S7:=K1:=K2:=K3:=K4:=K5:=0;      WAA01W00
00065         M:=1;                                                           WAA01X00
00066     WEER:INREAL(0,V1);G(/ M/):=V1/(10*B);                               WAA01Y00
00068        'IF'G(/  M/)<15/B'THEN'                                          WAA01Z00
00068           'BEGIN'M:=M+1;'GOTO'WEER;                                     WAA02A00
00070           'END';                                                        WAA02B00
00071         M:=M-1;INREAL(0,H);ININTEGER(0,L);                              WAA02C00
00074         'IF'M¬=L'THEN''BEGIN'OUTSTRING(1,'('FOUT IN CRD:')');           WAA02C10
00075                          FIX(1,4,0,CRD);OUTSTRING(1,'('M#L')');         WAA02C20
00077                          LINE(1,2);                                     WAA02C21
00078                        'END';                                           WAA02C30
00079 OUTINTEGER(1,M);LINE(1,2);                                              ***1
00081   'BEGIN''REAL''ARRAY'Y(/1:M/),Z(/1:M,1:1/),ZT(/1:1,1:M/),              WAA02C31
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BIJLAGE 5 b 1

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SC    SOURCE STATEMENT

00081     PP(/1:M,1:6/),PPT(/1:6,1:M/),CC(/1:6,1:M/),EE(/1:6,1:1/),                WAA02C32
00081   EET(/1:1,1:6/),SS1(/1:1,1:1/),SS2(/1:1,1:1/),SS(/1:1,1:M/);                WAA02C33
00082   'FOR'I:=1'STEP'1'UNTIL'M'DO'Z(/I,1/):=G(/I/);                              WAA02C34
00083           'IF'H<20'THEN'                                                     WAA02D00
00083           'BEGIN'Y(/  1/):=1;Y(/  M/):=-1;                                   WAA02D10
00085              'FOR'I:=2'STEP'1'UNTIL'M-1'DO'                                  WAA02D20
00085              Y(/  I/):=1-H/(1/2*B)     -10/(1/2*B)     *(I-2);               WAA02D30
00086           'END'                                                              WAA02D40
00086           'ELSE''BEGIN''FOR'I:=1'STEP'1'UNTIL'M-1'DO'                        WAA02D50
00086           Y(/  I/):=1-10/(1/2*B)     *(I-1);Y(/  M/):=-1;'END';              WAA02D60
00089         'FOR'I:=1'STEP'1'UNTIL'M'DO'                                        WAA02D70
00089           'BEGIN'                                                          WAA02E00
00089              PP(/I,1/):=1;                                                 WAA02E00
00090              PP(/I,2/):=Y(/I/);                                            WAA02G00
00091              PP(/I,3/):=P2(Y(/I/));                                        WAA02H00
00092              PP(/I,4/):=P3(Y(/I/));                                        WAA02I00
00093              PP(/I,5/):=P4(Y(/I/));                                        WAA02J00
00094              PP(/I,6/):=P5(Y(/I/));                                        WAA02K00
00095           'END';                                                           WAA02L00
00096           'FOR'I:=1'STEP'1'UNTIL'6'DO'                                     WAA02M00
00096           'FOR'J:=1'STEP'1'UNTIL'M'DO'                                     WAA02N00
00096              PPT(/I,J/):=PP(/J,I/);                                        WAA02O00
00097   MATVSL(PPT,PP,FF);                                                       ///02P10
00098   OUTARRAY(1,FF);                                                          ///02Q20
00099   LINE(1,2);                                                               ///02Q30
00100   'END';                                                                   WAA03I00
00101   'END';                                                                   WAA03J00
00102   OUTSTRING(1,'('M.B.V. GEVONDEN A-KOEFF. Z-WAARDEN BEREKENEN VAN DE NOG   WAA06B00
00102   NIET GEBRUIKTE DWARSPROFIELEN')');LINE(1,F);                             WAA06C00
00104   'COMMENT' TVIS AANTAL NIET GEBRUIKTE DWARSPROFIELEN;                     WAA06D00
00104   'BEGIN''REAL''ARRAY'CC(/1:6,1:1/),PP(/1:PO+1,1:1/),                      WAA06E00
00104      VARC(/1:1,1:1/),RPT(/1:1,1:PO+1/),VAR1(/1:1,1:PO+1/);                 WAA06E10
00105      'FOR'K:=1'STEP'1'UNTIL'TV'DO'                                         WAA06F00
00105      'BEGIN'                                                               WAA06G00
00105   INLEZEN: S:=S+1;                                                         WAA06G10
00106              INREAL(0,CRD);INREAL(0,B);INREAL(0,F);                        WAA06I00
00109         R(/S/):=B/F;                                                       WAA06I10
00110            M:=1;                                                           WAA06J00
00111         OPN: INREAL(0,V1);G(/ M/):=V1;                                     WAA06K00
00113           'IF'G(/  M/)<150 'THEN'                                          WAA06K10
00113              'BEGIN'M:=M+1;'GOTO'OPN;                                      WAA06K20
00115              'END';                                                        WAA06K30
00116           M:=M-1;INREAL(0,H);ININTEGER(0,L);                               WAA06K40
00119           'IF'M=L'THEN''BEGIN'OUTSTRING(1,'('FOUT IN CRD:')');            WAA06K50
00120                              FIX(1,4,0,CRD);OUTSTRING(1,'('M#L')');        WAA06L00
00122                              LINE(1,2);                                    WAA06L10
00123                           'END';                                           WAA06L20
00124   'IF'S<PO'THEN''GOTO'INLEZEN;                                            ***06L22
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BIJLAGE 5 b2

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SC      SOURCE STATEMENT

00125         'BEGIN''REAL''ARRAY'Z(/1:M,1:1/),Y(/1:M/);                          WAA06M00
00126   'FOR'I:=1'STEP'1'UNTIL'M'DO'Z(/I,1/):=G(/I/);                              WAA06N00
00127            'IF'H<20'THEN'                                                    WAA06O00
00127            'BEGIN'Y(/  1/):=1;Y(/  M/):=-1;                                  WAA06P00
00129               'FOR'I:=2'STEP'1'UNTIL'M-1'DO'                                 WAA06Q00
00129               Y(/  I/):=1-H/(1/2*B)     -10/(1/2*B)     *(I-2);              WAA06R00
00130            'END'                                                             WAA06S00
00130            'ELSE''BEGIN''FOR'I:=1'STEP'1'UNTIL'M-1'DO'                       WAA06T00
00130            Y(/  I/):=1-10/(1/2*B)     *(I-1);Y(/  M/):=-1;'END';            WAA06T10
00133   LINE(1,4);                                                                WAA06T11
00134            FIX(1,4,0,CRD);FIX(1,3,0,B);                                      WAA06T20
00136            RR(/1,1/):=1;                                                     WAA06U00
00137            'FOR'I:=2'STEP'1'UNTIL'P0+1'DO'                                   WAA06V00
00137               RR(/I,1/):=R(/S-I+2/);                                         WAA06W00
00138            MATVSL(A4,RR,CC);                                                 WAA06X00
00139            OUTSTRING(1,'('DE BEREK. C-WAARDEN:')');LINE(1,2);                WAA06Y00
00141         OUTARRAY(1,CC);LINE(1,2);                                            WAA06Z00
00143   'FOR'I:=1'STEP'1'UNTIL'P0+1'DO'RPT(/1,I/):=RR(/I,1/);                      WAA06Z10
00144   MATVSL(RPT,RRI,VAR1);                                                     WAA06Z20
00145   MATVSL(VAR1,RR,VARC);                                                     WAA06Z30
00146   OUTSTRING(1,'('DE GESCHATTE VARIANTIES VAN C-DAKJE WORDEN RESP.:')');     WAA06Z40
00147   LINE(1,2);                                                                WAA06Z50
00148   'FOR'I:=1'STEP'1'UNTIL'6'DO'                                              WAA06Z60
00148   'BEGIN'QQ:=VARC(/1,1/)*VARG(/I/);                                         WAA06Z70
00149   VAR7(/I/):=QQ;                                                            ***36Z71
00150      OUTREAL(1,QQ);LINE(1,1);                                               WAA06Z80
00152   'END';                                                                    WAA06Z90
00153   LINE(1,4);                                                                WAA06Z91
00154            OUTSTRING(1,'('Z OORSPR.-Z BEREK.WORDT:')');LINE(1,2);           WAA07A00
00156   OUTSTRING(1,'('          AFW:                    Z-BER:                   VWAA07A10
00156   AR(Z):                   ONDERGR:                BOVENGR:')');LINE(1,2);  WAA07A20
00158            'FOR'I:=1'STEP'1'UNTIL'M'DO'                                     WAA07B00
00158            'BEGIN'BERZ:=CC(/1,1/)+CC(/2,1/)*Y(/I/)+CC(/3,1/)*P2(Y(/I/))+    WAA07C00
00158                       CC(/4,1/)*P3(Y(/I/))+CC(/5,1/)*P4(Y(/I/))+            WAA07D00
00158                       CC(/6,1/)*P5(Y(/I/));                                 WAA07E00
00159               BERZ:=BERZ*10*B;                                              WAA07E10
00160   VARZ:=VAR7(/1/)+VAR7(/2/)*Y(/I/)**2+VAR7(/3/)*P2(Y(/I/))**2+              ***07E20
00160         VAR7(/4/)*P3(Y(/I/))**2+VAR7(/5/)*P4(Y(/I/))**2+                    ***07E30
00160         VAR7(/6/)*P5(Y(/I/))**2;                                            ***07E40
00161   VARZ:=VARZ*100*B**2;                                                      ***07E50
00162   BOVENGR:=BERZ+1.96*VARZ**(1/2);                                           ***07E60
00163   ONDERGR:=BERZ-1.96*VARZ**(1/2);                                           ***07E70
00164            AFW:=Z(/I,1/)-BERZ;                                              WAA07E00
00165   'IF'I>2'AND'I<M-2'THEN'                                                   WAA07E10
00165   'BEGIN'DELTA:=DELTA+AFW;NO:=NO+1;SS8:=SS8+AFW**2;                         WAA07E20
00168   'END';                                                                    WAA07E30
00169            OUTREAL(1,AFW);OUTREAL(1,BERZ);                                  WAA07G00
00171   OUTREAL(1,VARZ);OUTREAL(1,ONDERGR);OUTREAL(1,BOVENGR);LINE(1,1);          ***07G10
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SC      SOURCE STATEMENT

00175               'END';                                                  WAA07H00
00176            'END';                                                     WAA07I00
00177       'END';                                                          WAA07J00
00178   'END';                                                              WAA07K00
00179            'END';                                                     WAA03Z10
00180   SS8:=SS8/(NO-6);DELTA:=DELTA/NO;                                    WAA07M00
00182   LINE(1,4);                                                          >>>_000
00183   OUTSTRING(1,'('DE VARIANTIE VAN Z, GESCHAT ALS SS8=1/(N-6)*(Z-WERK- _ AA7N00
00183   Z-BEREK)**2 WORDT:')');                                             _  A7N00
00184   OUTREAL(1,SS8);LINE(1,4);                                           _   07000
00186   OUTSTRING(1,'('HET GESCHATTE GEM. VAN DE AFW. WORDT:')');           WAA07P00
00187   OUTREAL(1,DELTA);                                                   WAA07Q00
00188   LAB:  OUTSTRING(1,'('INVATA')'); LINE(1,8);                         WAA05F00
00190   'END'                                                               WAA05G00
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BIJLAGE 5b4

DE MATRIX A(/1:6,1:PO+1/) WORDT

+1.184065943588071'-02	-1.060035578643774'-04	-2.350491978109144'-04	+1.748500309248832'-03	-2.432592801935535'-03
+1.568518017800557'-04	-1.081773159734749'-04	+3.835502051459806'-03	-4.390563547858287'-04	-2.287683075710073'-03
+1.378175932939390'-03	-2.522950848101686'-03	-1.145176370438200'-03	+4.226662829194216'-03	-1.371218857348397'-03
-1.523354185708830'-03	+1.752711597982932'-04	-2.200645149902886'-04	+1.786579098928572'-03	-8.551034946344272'-04
-5.352542957923003'-04	+1.647773855385022'-03	+1.601340425570604'-04	-1.698520729910944'-04	-3.195377135577937'-04
-9.356060891577227'-04	+6.037322840250019'-04	+3.017529845560164'-03	-3.430166230307999'-03	+2.552945597747087'-03
-9.029477828267566'-04	-3.936059263531025'-04	+3.455817141460991'-03	-3.952846803531251'-03	-3.291340503241441'-03
-8.660108505310615'-03	-5.393074517023096'-03	-6.750838507987430'-03	-7.893735449144401'-03	-1.225449247747326'-03
+1.652532730295738'-03	-3.112631504430176'-03	-2.092396008441821'-03	-9.857464530447571'-04	+2.443223142936331'-03
+8.039251920930666'-04	+2.550586121673852'-03	+2.146833267496428'-03	+6.658674735164614'-04	+2.445311209356143'-03
+2.742456600156058'-03	+3.318686682062177'-04	+1.861416890831812'-03	-1.063221759414190'-04	+2.116463393554010'-03
-2.165755912704999'-03	+3.623079860854705'-03	-8.140312170176875'-04	-2.660883345808180'-03	+1.402305706626223'-03
+3.151064297360515'-03	-3.606949026678542'-03	-3.620341362189384'-03	-2.238966043309225'-03	+3.564374032524439'-03
-4.163533395928651'-03	+1.814185519352068'-03	-3.312823412367565'-03	+5.271259783847052'-03	-2.235456311213386'-03
-2.175657302891916'-03	+9.619835553684513'-04	+5.769962368428687'-03	-4.124379722980001'-03	+4.930551365650840'-03
-5.018981973589067'-03	-3.725202134424969'-03	+1.556793156722606'-03	+1.887350726956350'-03	+7.545116491274393'-04
+5.245132478048257'-04	-2.099324648674535'-03	-2.745510862796693'-03	+3.695098093113039'-03	-1.362623062496928'-03
-2.669918289212093'-04	-7.610201837310645'-03	+9.996219467172171'-03	-7.939404448407301'-04	-3.789325603590563'-04
+7.161520577347641'-04	-9.681445429750359'-04	-2.142958048944108'-03	+4.334648561314713'-04	-2.630290984109303'-03
-5.235973236392575'-03	+2.860392070792756'-03	+1.419576252099443'-02	-1.791321509740373'-03	+1.271935564514925'-02
-6.334826478986640'-03	+7.382811095992518'-03	+6.763336843142635'-04	-2.496946068990577'-03	+2.159694453076194'-03
-1.020477144277465'-03	+1.323003599016766'-03	+4.561605441851435'-03	-5.871650681618001'-03	-2.333996744375734'-03
-3.328361271788336'-03	+3.926384713188397'-04	-7.409883928812358'-04	+2.776540606613300'-03	+1.274307299797338'-03
-4.278759630209876'-03	-1.466914419173434'-03	+3.244144420537056'-03	-1.611436723016620'-03	-4.905265413430291'-03
+5.777531082197354'-03	-1.830329949614806'-03	-5.981802576139462'-04	+1.154532965063604'-03	-5.032252295288143'-03
+2.305346538978390'-03	-7.916956431963944'-03	+8.182479281956653'-03	-3.641427892209879'-03	+2.759621199016999'-04
-3.846234200411276'-03	-3.525085138834941'-04	+2.702274597696410'-03	+2.756892735279499'-03	-5.152663615074301'-03
+4.535114146201507'-03	-4.600398653868882'-03	-1.914321864586735'-03	+6.450446845207123'-03	+6.974065231856743'-04
-3.650301986438621'-04	-2.949089247436980'-04	-2.538292032806562'-04	+1.106386796720472'-04	+1.053696725230319'-03
-9.785397488528151'-04	-5.464972375320722'-04	-3.293217383715579'-03	+7.858776820676778'-03	-5.486419787125192'-03
+1.791265959523300'-03	-1.323278328795970'-03	+1.910461372423502'-03	+2.360717736711357'-04	+1.736399837701667'-04
+2.376797786235827'-05	-3.269544587759082'-03	+8.995442257460903'-03	+1.947000553495790'-03	-7.262825685973937'-04
+5.315941448628231'-03	-6.447100015426119'-03	+9.794028210325326'-03	-2.308840935501348'-03	-4.006370905077506'-03
+8.596737489050967'-03	-2.222705906009002'-03	+4.352189571828694'-03	-3.060112434148712'-04	-6.530733402354155'-03
+2.063348934072239'-03	+5.126345512327109'-04	-4.979630024495189'-04	-2.475510426233530'-04	-2.784550906765775'-03
+1.764115634230643'-04	-4.983193340408047'-03	+6.089994934665314'-03	-2.723292155661819'-03	+1.651136709171790'-03
-3.485422884462866'-03	+2.597071422421341'-03	-3.210561354607416'-03	+1.911632341253632'-03	-4.233460583712098'-03
+4.257341392450196'-03				

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DE MATRIX A(/1:7,1:P0+1/) NOROT

+1.207735271241213'-02	+3.616298911591088'-02	-2.285102221431654'-02	-6.743769486352347'-03	-2.933801865579727'-03
+8.552285549612032'-05	+2.462902316767083'-04	+5.344497937919497'-04	-1.838056856468706'-04	-7.033574801021397'-04
+5.775267400996152'-04	-1.763605257851933'-03	-1.794752557689312'-04	+3.109935326034254'-03	-4.110445634892556'-04
-1.106113742370634'-04	-1.246902386572586'-03	+9.043782523327742'-04	+1.071798762864906'-03	+4.082509170287773'-04
-1.031666780115939'-03	+2.379233060918347'-03	-3.524852744257082'-04	-9.012664909370564'-04	+2.552497557853770'-04
+3.262104268919107'-04	+3.213306484017364'-04	+2.062540975720800'-04	+3.612894399592802'-04	+1.664533792576423'-03
-1.212151974708040'-03	-3.590614777945522'-04	+1.770497909684066'-02	-1.289970547806841'-02	-1.450477337328155'-02
-5.863089e96917624'-03	-6.058702079855025'-03	-5.265223661603863'-03	-6.519794339109903'-03	-2.914222793553371'-03
-1.221341876841197'-03	-3.969711711979529'-03	-3.268342759301632'-03	-1.911802095999338'-03	+2.078028325541311'-03
+2.453233320000435'-03	+1.193430463051255'-03	+7.642405671614556'-04	+3.892525453659232'-03	+1.382805236836312'-03
+2.255340464741912'-03	+9.103410078359111'-04	+2.464947342297716'-03	+2.374143297606805'-04	+2.293768487327532?'-04
+1.993492090222286'-03	-2.133352953814796'-03	+7.717485694954714'-04	+1.109151656649293'-03	-1.573859594022577'-03
+1.016435615242935'-03	-6.016304534235880'-04	-2.983994417C09069'-03	+5.972635566509281'-04	-2.917377739043219'-03
+3.825307143548336?'-03	-1.106679514851650'-03	-1.929473478762260'-03	+8.371966548963169'-05	-5.064628613771649'-04
-8.057046717956341'-04	+1.415455554082256'-03	+1.626249556339766'-03	-7.013559718596947'-05	+9.155447584556371'-04
-2.000090206184307'-03	-2.588066748918434'-03	+3.443363267454036'-03	-9.649946139461452'-04	+1.024631904256122'-03
-1.501197349818919'-03	-7.313253360993344'-04	-4.059932059691468'-04	+1.659198316415966'-03	-7.577250182593056'-04
-2.428c62437e70746'-03	-4.320453946514608'-04	+3.499243664959093'-03	-2.047507503143784'-03	+1.383184912355717?'-03
-3.457703924034899'-05	-1.796423151526759'-03	-2.507801222205382'-04	+4.067078140180772'-04	-2.663309641716051'-03
-6.556517621439081'-04	+1.375092211868628'-03	+5.562981477060662'-03	+5.598358321319950'-03	+3.593892719356764'-03
+4.211447577256819'-03	+4.534363680853398'-03	-8.804197051937996'-04	-1.982299484975532'-03	+2.455485529941103'-03
+1.283024245104762'-03	-6.422069326840562'-04	-7.966213712995104'-05	-9.734006078176370'-04	-2.357855255078136'-03
-4.277160277221559'-03	+8.629797044013465'-04	+1.098576452797058'-03	+1.607774017312587'-03	-1.461321974017140'-03
-1.577344062700036'-03	-8.404311759326208'-04	-1.110737324144486'-03	+1.862818939250050'-03	-5.437031843405557'-04
+7.178206710185452'-04	-1.109503300837696'-03	+1.185259225293720'-03	-1.883050215281272'-04	-3.963150243540215'-03
+3.824906554864307'-03	-2.666720662790598'-03	-3.275138868843318'-03	+9.389178273723779'-04	-1.000255838313955?'-03
-1.256450271909300'-03	-2.047736349501356'-03	+1.654940608601093'-03	+2.219411578895382'-03	-1.276280089416737?'-03
-1.418473963775192'-03	+7.233659781199870'-05	+3.055499921114457'-03	-4.423279479744336'-04	-1.286731332025677'-03
+1.718934880535367'-03	-9.815583868862834'-04	+1.458315264826940'-03	-8.022556969625049'-04	+2.919619822314532'-03
-3.436963929866373'-03	+2.266960139201229'-03	-2.002219112246149'-03	+6.689734560632697'-04	-7.482015795926587'-04
+2.521384168545824'-04	-7.847455047694324'-04	+2.103310252667193'-03	+7.697082469272147'-04	-7.011210450532542'-04
+3.056553432313751'-05	-1.889170579699409'-03	+3.067239983707063'-03	+8.215831776617905'-03	-9.024124767351291'-04
+1.109391539339124'-03	+2.834612575345572'-04	+2.662214449411272'-03	-7.573602470221252'-04	+1.099759e50223745'-03
+4.435904828321465'-03	-4.371930872171487'-05	-6.728168757921025'-04	+7.888821734438281'-04	-2.543340570081454'-03
+2.468915236883757'-04	+1.878029554820159'-05	-1.747994410931173'-03	+1.235137833056575'-03	-2.077818879113555'-03
-2.135722784703715'-03	-1.310663205417983'-03	+1.814248568850121'-03	+3.087844159232296'-04	-1.355057584727127'-03
+3.979141806514392'-04	+2.975420079691782'-04	-4.047809233203355'-03	+4.250410912658730'-03	-1.709799624705512'-03
+9.851904241126911'-04	-3.630052284771943'-03	+4.199127874068449'-03	-1.956354648022249'-05	-3.002277997204913'-03
-3.603505727732580'-04	+1.136147118470617'-03	+9.504918295570421'-04	+2.674212758055544'-04	-7.175711204007045'-04
-1.626318826826207'-03	-2.313174509614893'-04	+2.224388467938690'-03	-1.659619326660236'-03	+5.012290124138533'-05
+2.826705803279940'-03	-3.688737735701251'-03	+1.835357468213429'-03	-2.262378827743167'-04	-2.552537030821017'-04
+1.524370198008993'-03	-1.769214147451954'-03	-2.763306107492208'-04	-2.903679569962213'-03	+3.765317433807570'-03
+6.239900818766831'-04	-4.942807544666244'-04	+1.413970443655744'-03	-8.924752683596350'-04	-2.785577620531722'-03
+2.661854530007921'-03	-3.056627927078187'-04			

ANNEXE 7

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 SC     SOURCE STATEMENT

00000  'BEGIN''REAL'CRD,SOM,ZS,S0,S1,S2,S3,S4,S5,S6,S7,K1,K2,K3,K4,K5,  Q,E,F, WAA01E00
00000       D,H,SB,S,T,V,VAR,U,W,V1,V2,V3,V4,V5,V6,V7,DD,B1,SSD,BERZ,AFW,      WAA01E00
00000     VAR1,VAR2,VAR3,VAR4,VAR5,VAR6,VARA,QQ,VAR8,                         WAA01E10
00000  SS8,DELTA;                                                             WAA01E11
00000  XX,YY,                                                                 WAA01E12
00000  VARZ,BOVENGR,ONDERGR;                                                  ***01E20
00001    'INTEGER'P,S,I,J,M,L,PO,K,TV,NO,ALPHA;                               WAA01000
00002     'PROCEDURE' ALGPLOT(A,B,C,D,E,F,G,H,I,J,K,L,M,N,P);                 PROC0100
00003                 'VALUE'       D,E,F,G,H,I,J,K,L,     P ;               PROC0110
00004                 'INTEGER'                     K,L,M,   P ;             PROC0120
00005                 'STRING'                          N    ;               PROC0130
00006                 'REAL'  A,B,C,D,E,F,G,H,I,J             ; 'CODE';     PROC0140
00008  'PROCEDURE' PLOTS(PS,PL);                                               PLOT0100
00009  'VALUE' PS,PL;  'INTEGER' PS,PL;                                        PLOT0200
00011  ALGPLOT(1.0,1.0,1.0,1,1,1,1,1,1,1,PS,PL,1,'('0')',1);                   PLOT0300
00012   'PROCEDURE' PLOT(X,Y,IPEN); 'VALUE' X,Y,IPEN;                          PROC0180
00014                 'REAL' X,Y; 'INTEGER' IPEN;                             PROC0190
00016       ALGPLOT(1.0,1.0,1.0,X,Y,1,1,1,1,1,IPEN,1,1,'('0')',2);            PROC0200
00017     'PROCEDURE' FACTOR(FCTR); 'VALUE' FCTR; 'REAL' FCTR;                PROC0210
00020       ALGPLOT(1.0,1.0,1.0,FCTR,1,1,1,1,1,1,1,1,1,'('0')',3);            PROC0220
00021     'PROCEDURE' WHERE(X,Y,FCTR); 'REAL' X,Y,FCTR;                       PROC0230
00023       ALGPLOT(X,Y,FCTR,1,1,1,1,1,1,1,1,1,'('0')',4);                    PROC0240
00024     'PROCEDURE' OFFSET(XO,XF,YO,YF);                                    PROC0250
00025                 'VALUE' XO,XF,YO,YF; 'REAL' XO,XF,YO,YF;                PROC0260
00027       ALGPLOT(1.0,1.0,1.0,XO,XF,YO,YF,1,1,1,1,1,1,'('0')',5);           PROC0270
00028     'PROCEDURE' MARK(X,Y,H,MRK,DIR,N); 'VALUE' X,Y,H,MRK,DIR,N;         PROC0280
00030                 'REAL' X,Y,H,DIR; 'INTEGER' MRK,N;                      PROC0290
00032       ALGPLOT(1.0,1.0,1.0,X,Y,H,DIR,1,1,1,MRK,N,1,'('0')',7);           PROC0300
00033     'PROCEDURE' SYMBOL(X,Y,H,TEXT,DIR,N); 'VALUE' X,Y,H,DIR,N;          PROC0320
00035                 'REAL' X,Y,H,DIR; 'INTEGER' N; 'STRING' TEXT;           PROC0330
00038       ALGPLOT(1.0,1.0,1.0,X,Y,H,DIR,1,1,1,1,N,1,TEXT,8);                PROC0340
00039     'PROCEDURE' NUMBER(X,Y,H,FPV,DIR,N); 'VALUE' X,Y,H,FPV,DIR,N;       PROC0350
00041                 'REAL' X,Y,H,FPV,DIR; 'INTEGER' N;                      PROC0360
00043       ALGPLOT(1.0,1.0,1.0,X,Y,H,FPV,DIR,1,1,N,1,1,'('0')',9);           PROC0370
00044     'PROCEDURE' AXIS(X,Y,TEXT,N,AXL,DIR,FIRSTV,DELTAV);                 PROC0380
00045                 'VALUE' X,Y,N,AXL,DIR,FIRSTV,DELTAV; 'INTEGER' N;       PROC0390
00047                 'REAL' X,Y,AXL,DIR,FIRSTV,DELTAV; 'STRING' TEXT;        PROC0400
00049       ALGPLOT(1.0,1.0,1.0,X,Y,AXL,DIR,FIRSTV,DELTAV,1,N,1,1,TEXT,10);   PROC0410
00050     'PROCEDURE' SCALE(ARR,AXL,N,K); 'VALUE' AXL,N,K; 'ARRAY' ARR;       PROC0420
00053                 'REAL' AXL; 'INTEGER' N,K;                              PROC0430
00055       ALGPLOT(ARR(/1/),1.0,1.0,AXL,1,1,1,1,1,1,N,K,1,'('0')',11);       PROC0440
00056    'PROCEDURE' LINES(XARR,YARR,N,K,J,L);  'VALUE'N,K,J,L;
00058                 'ARRAY' XARR,YARR; 'INTEGER' N,K,J,L;                   PROC0460
00060      'BEGIN' 'INTEGER' 'ARRAY' INT(/1:4/);                              PROC0470
00061             INT(/1/):=N; INT(/2/):=K; INT(/3/):=J; INT(/4/):=L;         PROC0480
00065   ALGPLOT(XARR(/1/),YARR(/1/),1.0,1,1,1,1,1,1,1,1,1,INT(/1/),'('0')',12);PROC0490
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SC      SOURCE STATEMENT

00066       'END';                                                              PROC0500
00067      'PROCEDURE'LASPLO;
00068          ALGPLOT(1.0,1.0,1.0,1,1,1,1,1,1,1,1,1,1,'('0')',13);
00069    'PROCEDURE'INVGAU(A,N,EPS,SINGULIER);'VALUE'N;'INTEGER'N;'REAL'EPS;    WAA01H00
00073     'ARRAY'A;'LABEL'SINGULIER;'CODE';                                     WAA01I00
00076      'PROCEDURE'LINE(D,N);'VALUE'D,N;'INTEGER'D,N;'CODE';                 WAA01J00
00080   'PROCEDURE'BLANK(D,N);'VALUE'D,N;'INTEGER'D,N;'CODE';                   WAA01J10
00084      'PROCEDURE'FIX(D,M,N,X);'VALUE'D,M,N,X;'INTEGER'D,M,N;               WAA01K00
00087              'REAL'X;'CODE';                                              WAA01L00
00089      'PROCEDURE'FLO(D,M,N,X);'VALUE'D,M,N,X;'INTEGER'D,M,N;               WAA01M00
00092              'REAL'X;'CODE';                                              WAA01N00
00094      'PROCEDURE'INVATA(A,D,M,N,EPS,LAB);'VALUE'M,N,EPS;'INTEGER'M,N;      WAA31N10
00097               'REAL'D,EPS;'ARRAY'A;'LABEL'LAB;'CODE';                     WAA31N20
00101      'PROCEDURE'MATVSL(A,B,C);'ARRAY'A,B,C;'CODE';                        WAA01N30
00104     M:=40;ININTEGER(0,S);ININTEGER(0,P0);                                 WAA01O00
00107   ININTEGER(0,TV);                                                        WAA01O10
00108   VAR1:=VAR2:=VAR3:=VAR4:=VAR5:=VAR6:=VAR8:=0;                            WAA01O20
00109   XX:=4;YY:=25;ALPHA:=1;                                                  WAA01O30
00112     'BEGIN''REAL''ARRAY'G(/1:40/),      C(/1:S+1,1:7/),R(/0:S+TV/),       WAA01P00
00112         FF(/1:7,1:7/),AA(/1:7,1:P0+1/),RRI(/1:P0+1,1:P0+1/),              WAA01Q00
00112         VARG(/1:7/),                                                      WAA01Q10
00112   VAR7(/1:7/);                                                            WAA01Q20
00113   'REAL''PROCEDURE'P2(Y);'REAL'Y;P2:=1/2*(3*Y*Y-1);                       WAA01R00
00115   'REAL''PROCEDURE'P3(Y);'REAL'Y;P3:=1/2*(5*Y*Y*Y-3*Y);                   WAA01S00
00119   'REAL''PROCEDURE'P4(Y);'REAL'Y;P4:=1/8*(35*Y*Y*Y*Y-30*Y*Y+3);           WAA01T00
00122   'REAL''PROCEDURE'P5(Y);'REAL'Y;P5:=1/8*(63*Y*Y*Y*Y*Y-70*Y*Y*Y+15*Y);    WAA01T10
00125   'REAL''PROCEDURE'P6(Y);'REAL'Y;                                         WAA01T20
00127   P6:=1/16*(231*Y**6-315*Y**4+105*Y*Y-5);                                 WAA01T30
00128   N0:=0;DELTA:=0;
00130   INARRAY(0,VARG);INARRAY(0,AA);INARRAY(0,RRI);                           ***06A40
00133   OUTSTRING(1,'('M.B.V. GEVONDEN A-KOEFF. Z-WAARDEN BEPEKENEN VAN DE NOG  WAA06B00
00133   NIET GEBRUIKTE DWARSPROFIELEN')');LINE(1,8);                            WAA06C00
00135   'COMMENT' TVIS AANTAL NIET GEBRUIKTE DWARSPROFIELEN;                    WAA06D00
00135   'BEGIN''REAL''ARRAY'CC(/1:7,1:1/),BB(/1:P0+1,1:1/),                     WAA06E00
00135      VARC(/1:1,1:1/),RPT(/1:1,1:P0+1/),VAR1(/1:1,1:P0+1/);                WAA06E10
00135   PLOTTEN: PLOTS(1,30);ALPHA:=1;                                          WAA06E30
00138   FACTOR(0.3937);                                                         WAA06F30
00139      'FOR'K:=1'STEP'1'UNTIL'10'DO'                                        WAA06F00
00139      'BEGIN'                                                              WAA06G00
00139 . INLEZEN: S:=S+1;                                                        WAA06G10
00140               INREAL(0,CRD);INREAL(0,B);INREAL(0,F);                      WAA06I00
00143        R(/S/):=B/F;                                                       WAA06I10
00144          M:=1;                                                            WAA06J00
00145       OPN: INREAL(0,V1);G(/ M/):=V1;                                      WAA06K00
00147   'IF'CRD<9243|CRD>9292'THEN'                                             WAA06K01
00147             'BEGIN'                                                       WAA06K02
00147         'IF'G(/  M/)<150 'THEN'                                           WAA06K10
00147             'BEGIN'M:=M+1;'GOTO'OPN;                                      WAA06K20
```

BIJLAGE 8²

```
SC     SOURCE STATEMENT

00149                 'END';                                                      WAA06K21
00150                 'END''ELSE'M:=28;                                          WAA06K30
00151           M:=M-1;INREAL(0,H);ININTEGER(0,L);                               WAA06K40
00154           'IF'M¬=L'THEN''BEGIN'OUTSTRING(1,'('FOUT IN CRD:')');           WAA06K50
00155                            FIX(1,4,0,CRD);OUTSTRRING(1,'('M#L')');         WAA06L00
00157                            LINE(1,2);                                       WAA06L10
00158                          'END';                                             WAA06L20
00159    'IF'S<PO'THEN''GOTO'INLEZEN;                                            ***06L22
00160         'BEGIN''REAL''ARRAY'Z(/1:M,1:1/),Y(/1:M/),                         WAA06M00
00160                      ZO(/1:M+2/),                                           WOA36M*1
00160                      ZN(/1:M+2/),YN(/1:M+2/);                               WAA06M01
00161    'IF'CRD<9243|CRD>9292'THEN'                                             WAA06M10
00161    'BEGIN'                                                                   WOA36M20
00161    'FOR'I:=1'STEP'1'UNTIL'M'DO'ZO(/I/):=-G(/M-I+1/);                       WAA06N00
00162    ZO(/M+1/):=0;ZO(/M+2/):=10;                                              WOA36N10
00164    'END';                                                                    WOA36N20
00165           'IF'H<20'THEN'                                                    WAA06O00
00165           'BEGIN'Y(/  1/):=1;Y(/  M/):=-1;                                  WAA06P00
00167              'FOR'I:=2'STEP'1'UNTIL'M-1'DO'                                 WAA06Q00
00167              Y(/  I/):=1-H/(1/2*B)     -10/(1/2*B)     *(I-2);             WAA06R00
00168           'END'                                                             WAA06S00
00168           'ELSE''BEGIN''FOR'I:=1'STEP'1'UNTIL'M-1'DO'                      WAA06T00
00168           Y(/  I/):=1-10/(1/2*B)      *(I-1);Y(/  M/):=-1;'END';            WAA06T10
00171    LINE(1,4);                                                                WAA06T11
00172           FIX(1,4,0,CRD);FIX(1,3,0,B);                                      WAA06T20
00174           RR(/1,1/):=1;                                                     WAA06U00
00175           'FOR'I:=2'STEP'1'UNTIL'PO+1'DO'                                   WAA06V00
00175              RR(/I,1/):=R(/S-I+2/);                                         WAA06W00
00176           MATVSL(AA,RR,CC);                                                 WAA06X00
00177           OUTSTRING(1,'('DE BEREK. C-WAARDEN:')');LINE(1,2);                WAA06Y00
00179         OUTARRAY(1,CC);LINE(1,2);                                           WAA06Z00
00181    'FOR'I:=1'STEP'1'UNTIL'PO+1'DO'RPT(/1,I/):=RR(/I,1/);                  WAA06Z10
00182    OUTSTRING(1,'('         Z-BER:')');LINE(1,2);                            WAA07A10
00184           'FOR'I:=1'STEP'1'UNTIL'M'DO'                                      WAA07B00
00184           'BEGIN'BERZ:=CC(/1,1/)+CC(/2,1/)*Y(/I/)+CC(/3,1/)*P2(Y(/I/))+    WAA07C00
00184                         CC(/4,1/)*P3(Y(/I/))+CC(/5,1/)*P4(Y(/I/))+          WAA07D00
00184                         CC(/6,1/)*P5(Y(/I/))+CC(/7,1/)*P6(Y(/I/));          WAA07E00
00185              BERZ:=BERZ*10*8;ZN(/M-I+1/):=-BERZ;                            WAA07F10
00187    OUTREAL(1,BERZ);LINE(1,1);                                               WAA07G00
00189           'END';                                                            WAA07G31
00190      ZN(/M+1/):=0;ZN(/M+2/):=10;                                            WAA07G02
00192    'IF'ALPHA=        2'OR'                                                  WAA07G10
00192        ALPHA=        4'OR'                                                  WAA07G20
00192        ALPHA=        6'OR'                                                  WAA07G30
00192        ALPHA=        8'OR'                                                  WAA07G40
00192        ALPHA= 10                                                            WAA07G50
00192    'THEN''BEGIN'XX:=0;YY:=-12.5;'END'                                       WAA07G60
00194    'ELSE''BEGIN'XX:=21;YY:=12.5;'END';                                            70
```

BIJLAGE 8[3]

```
 SC     SOURCE STATEMENT

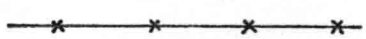
00197   'IF'ALPHA=1'THEN''BEGIN'XX:=5;YY:=24;'END';                          WAA07G80
00200   'FOR'I:=1'STEP'1'UNTIL'M'DO'YN(/I/):=1/2*3*Y(/M+1-I/);               WAA07G81
00201                           YN(/M+1/):=-140;YN(/M+2/):=20;                WAA07G82
00203   PLOT(XX,YY,-3);                                                       WAA07G83
00204   SYMBOL(0,1,0.5,'('CRD:')',0,4);NUMBER(999,999,0.5,CRD,0,-1);          WAA07G84
00206   SYMBOL(0,0.4,0.3,'('R:')',0,2);NUMBER(999,999,0.3,F,0,-1);            WAA07G85
00208   AXIS(0,0,'('BREEDTE:1CM=20M')',+15,14,0,-140,20);                     WAA07G87
00209   AXIS(7  ,0,'('DIEPTE:1CM=1M')',+13,10,270,0,10);                      WAA07G88
00210   LINES(YN,ZN,M ,1,0,0);                                                WAA07G89
00211   'IF'CRD<9243'OR'CRD>9292'THEN'                                        WAA07G90
00211         LINES(YN,ZN,M,1,2,4 );ALPHA:=ALPHA+1;                           WAA07G91
00213   'IF'CRD>9350'THEN''GOTO'EINDE;                                        WAA07G92
00214         'END';                                                          WAA07I00
00215      'END';                                                             WAA07J00
00216   EINDE:                                                                WAA07J01
00216   LASPLO;                                                               WAA07J10
00217   'IF'CRD<9351'THEN''GOTO'PLOTTEN;                                      WAA07J20
00218   'END';                                                                WAA07K00
00219         'END';                                                          WAA03Z10
00220   LAB:  OUTSTRING(1,'('INVATA')'); LINE(1,8);                           WAA05F00
00222   'END'                                                                 WAA05G00
```

DWARSPROFIELEN

BIJ

NIJMEGEN

km 873^{E} t/m km 874^{F}

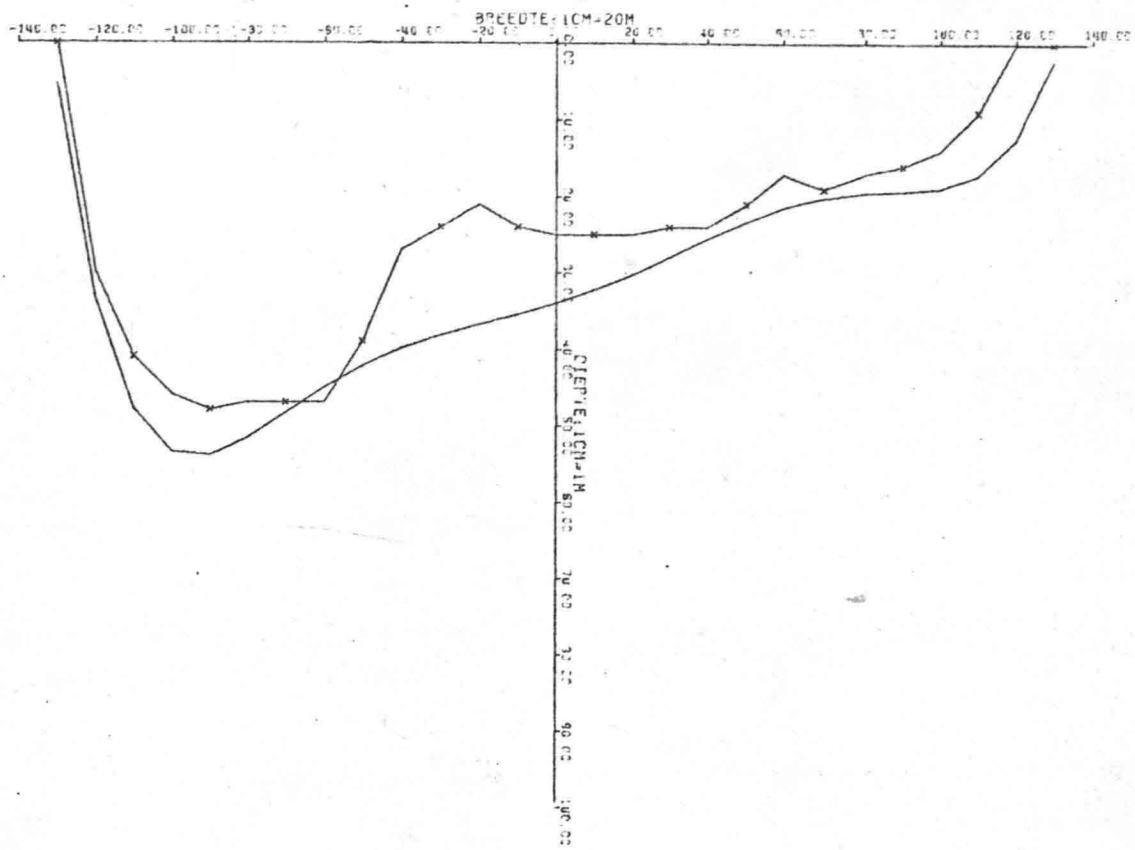


Bestaande dwarsprofiel.

Berekende dwarsprofiel.

BIJLAGE 9

CRD: 8735



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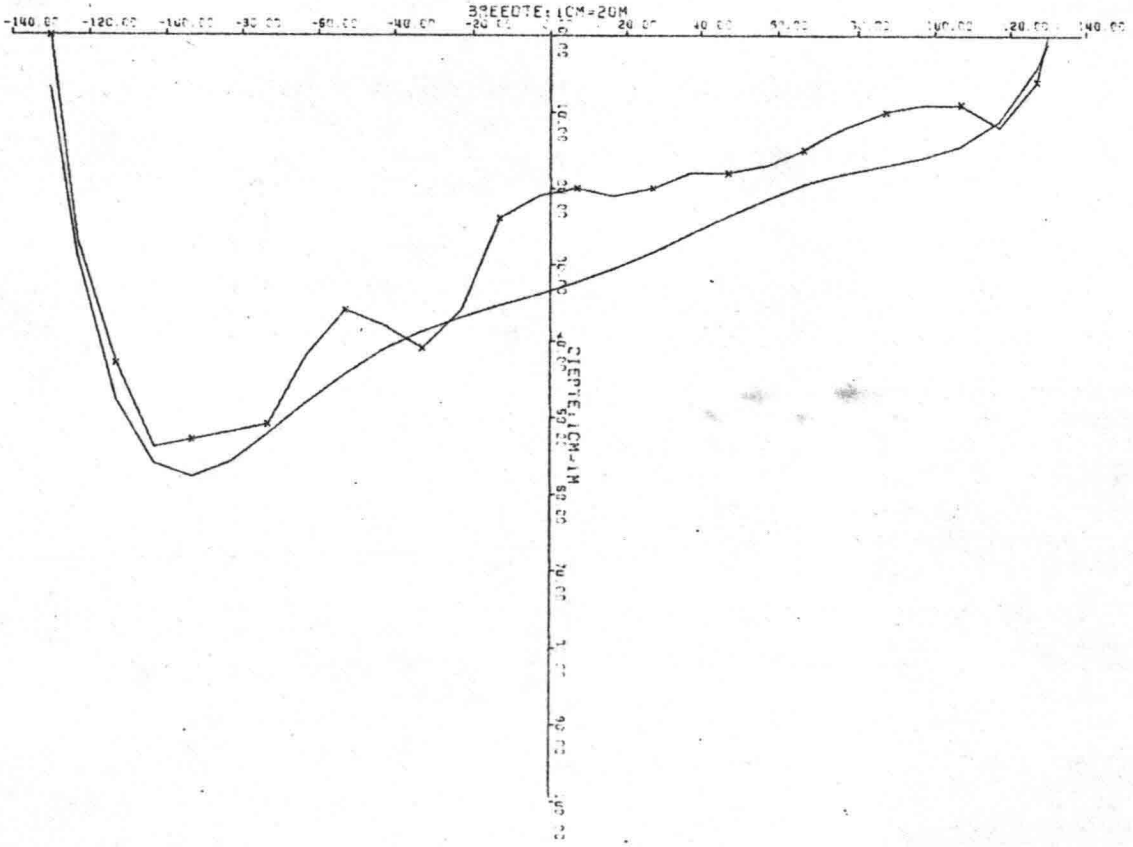

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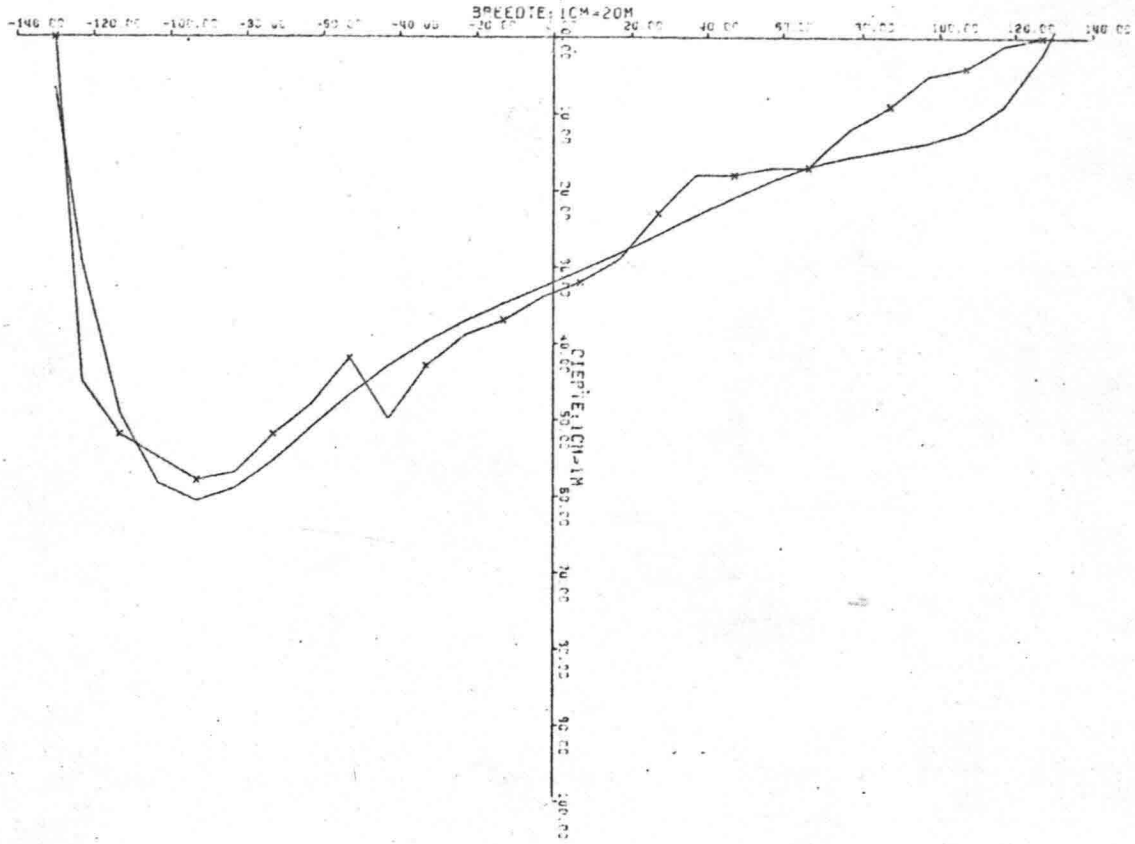

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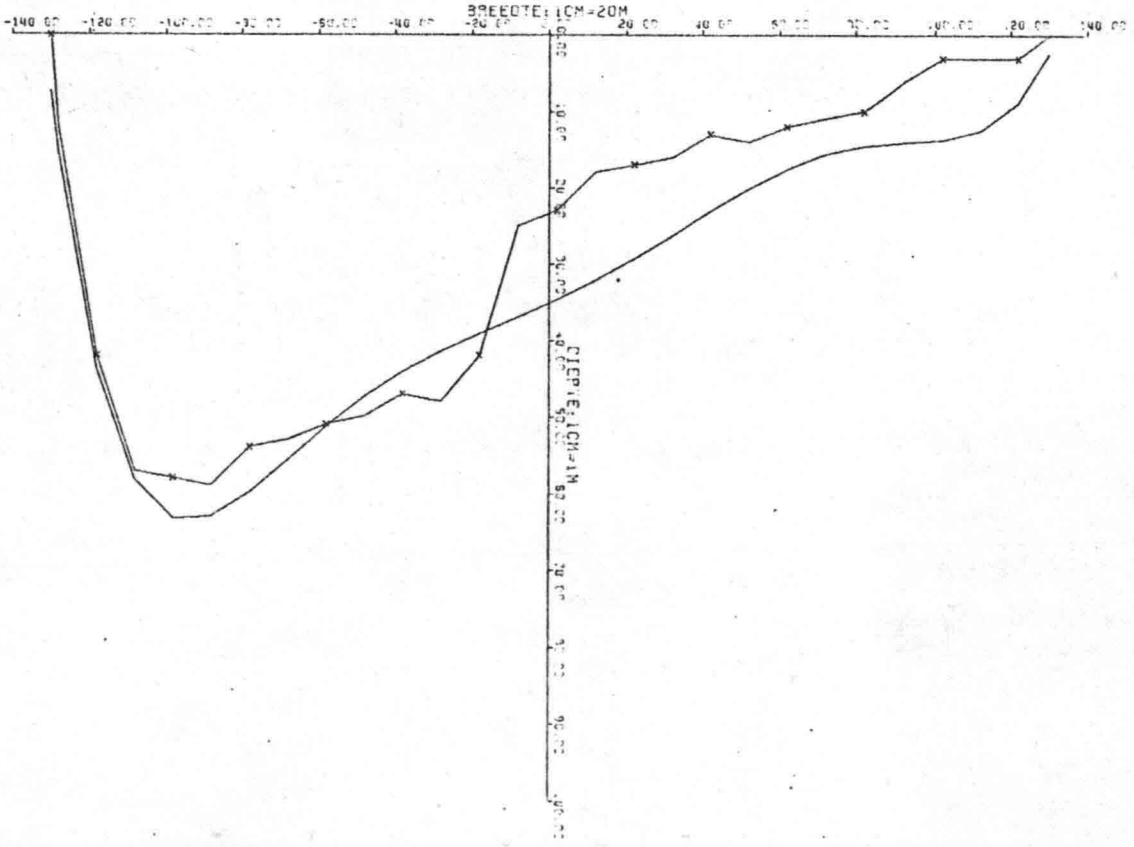

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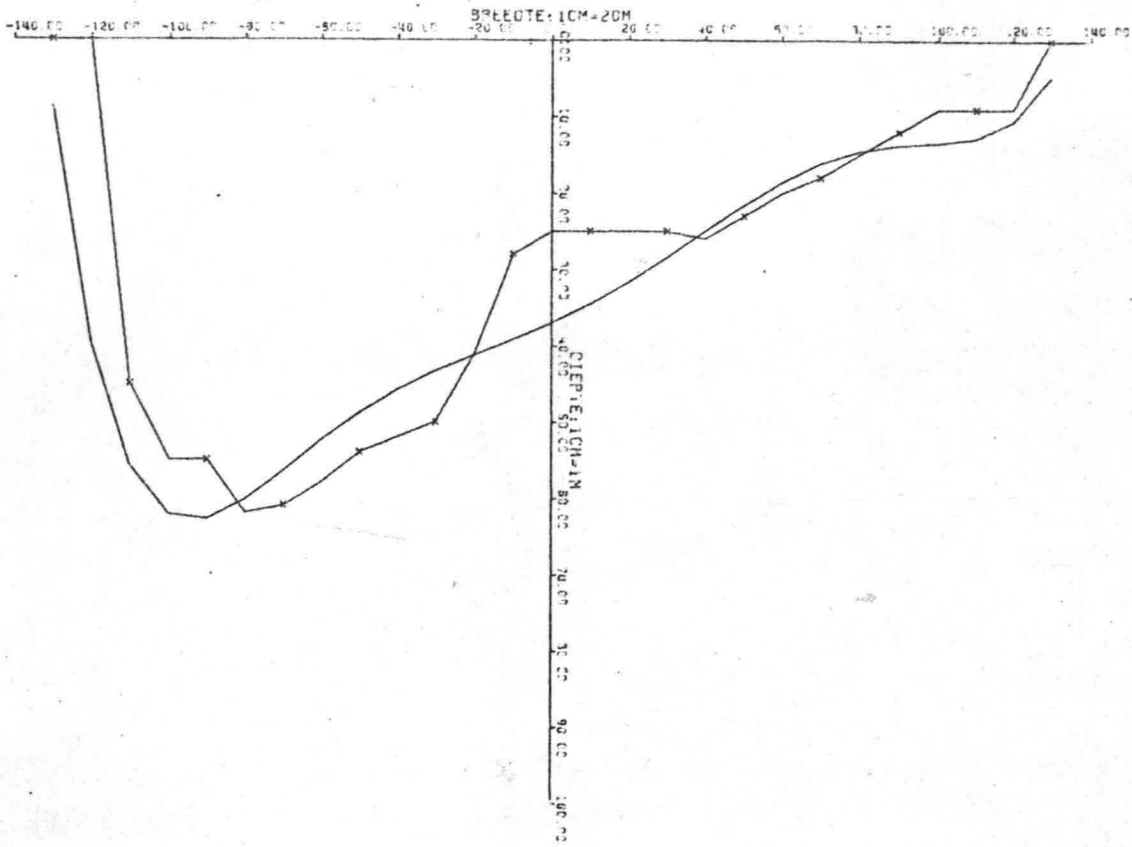

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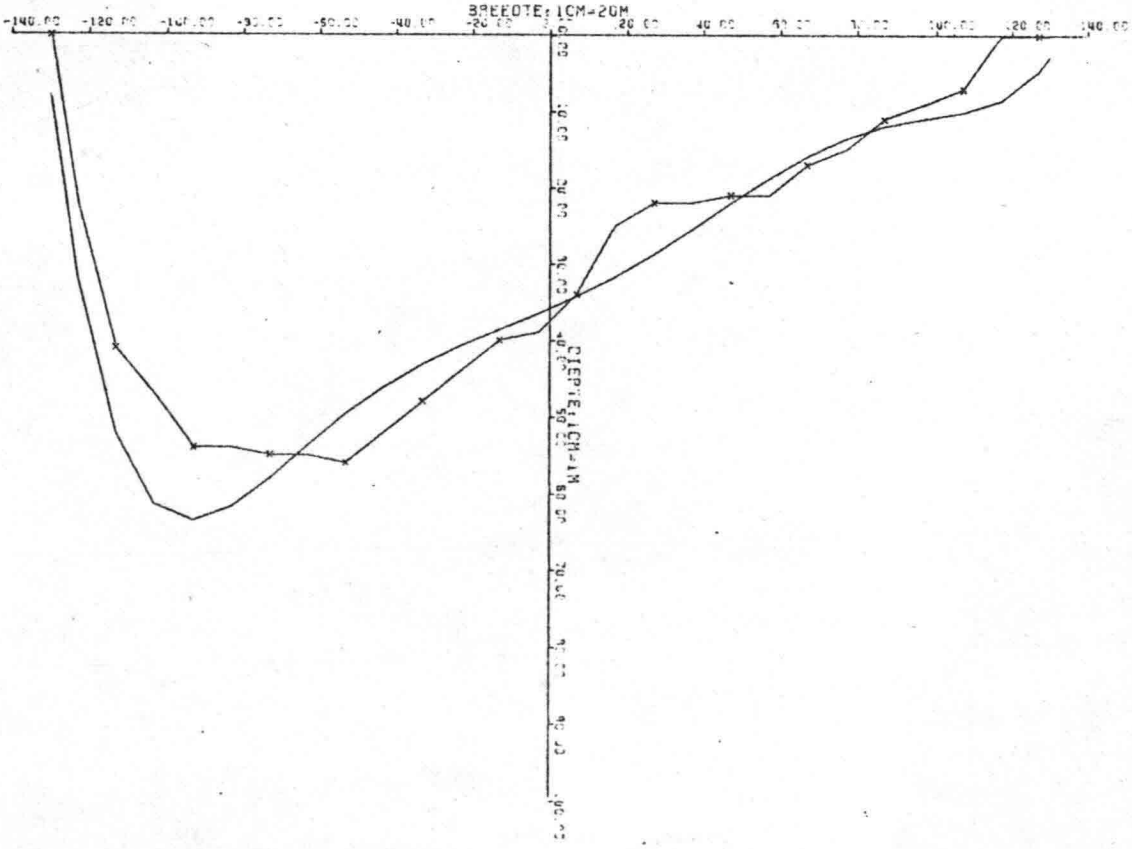

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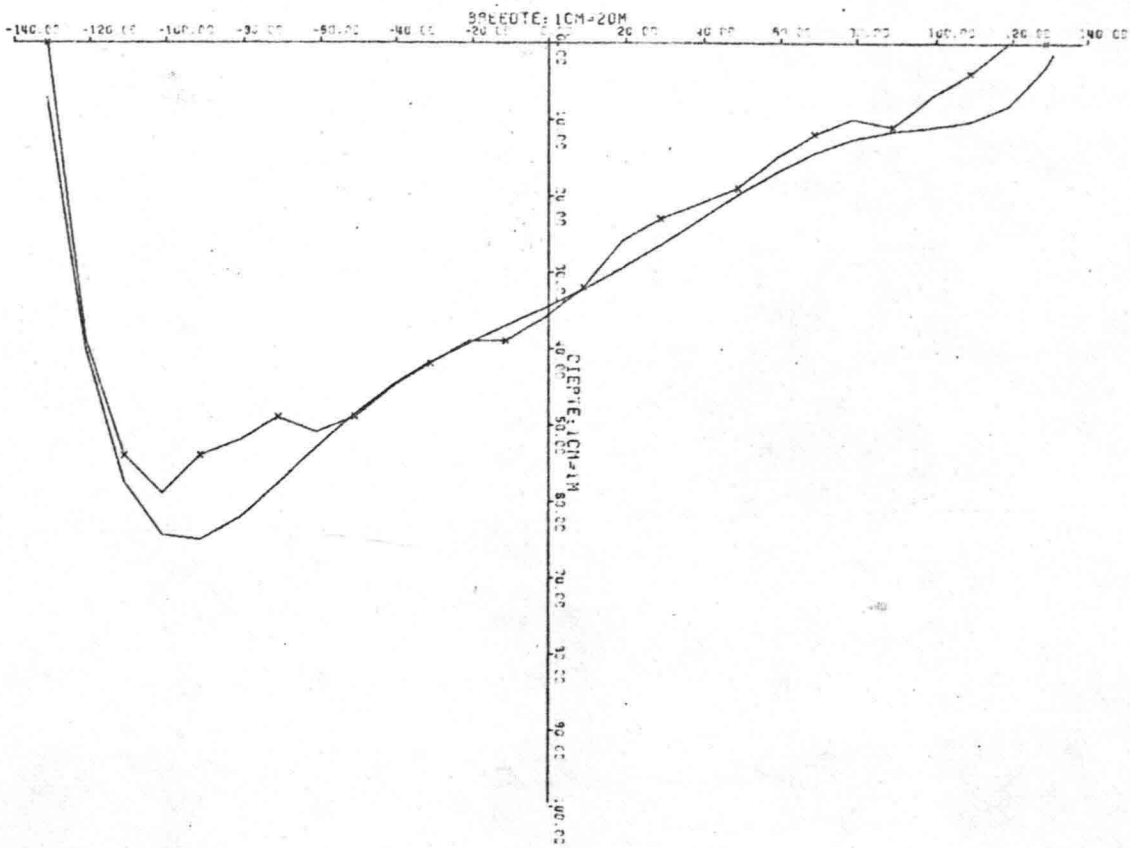

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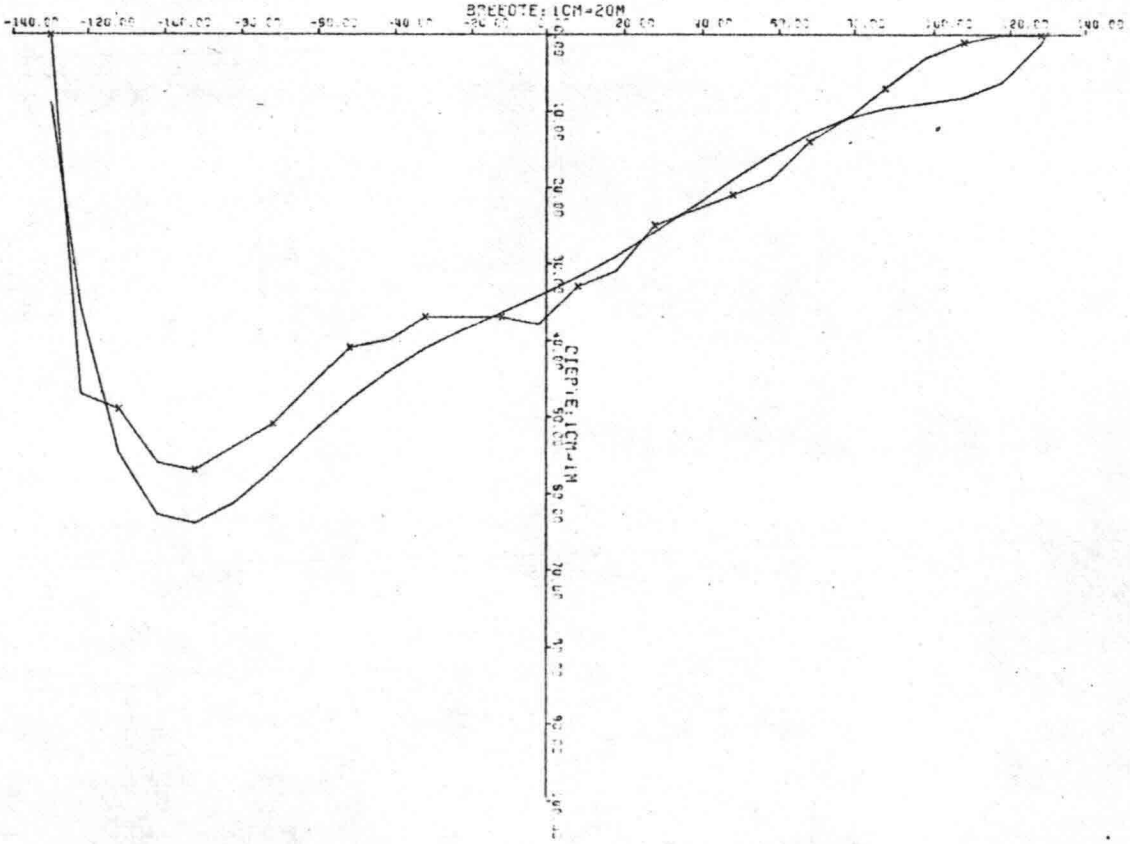

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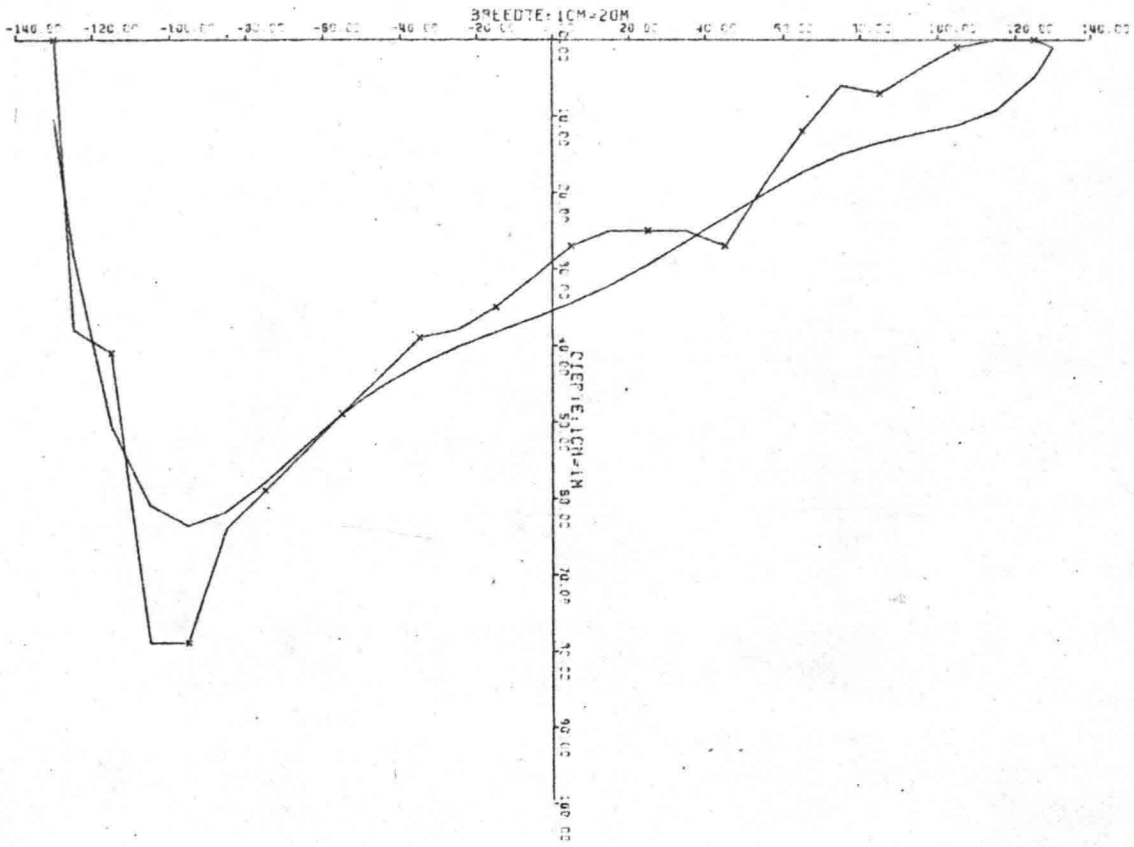

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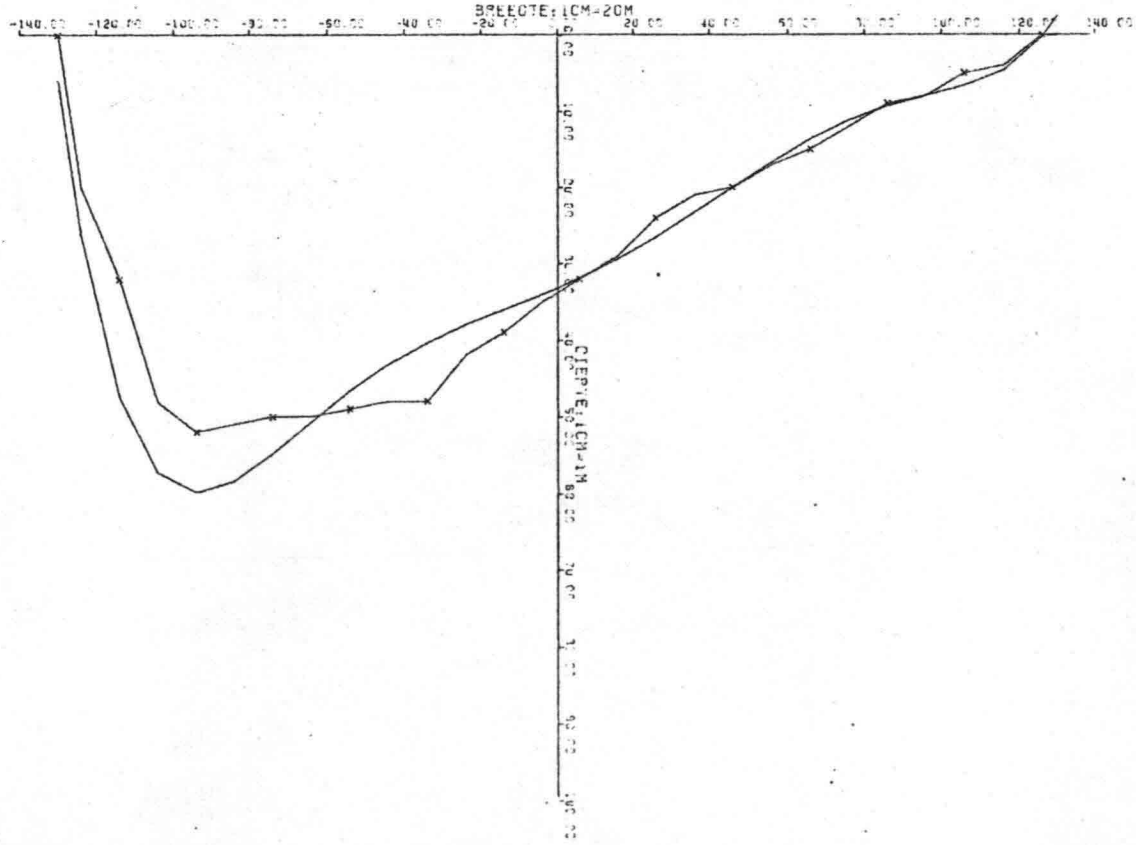
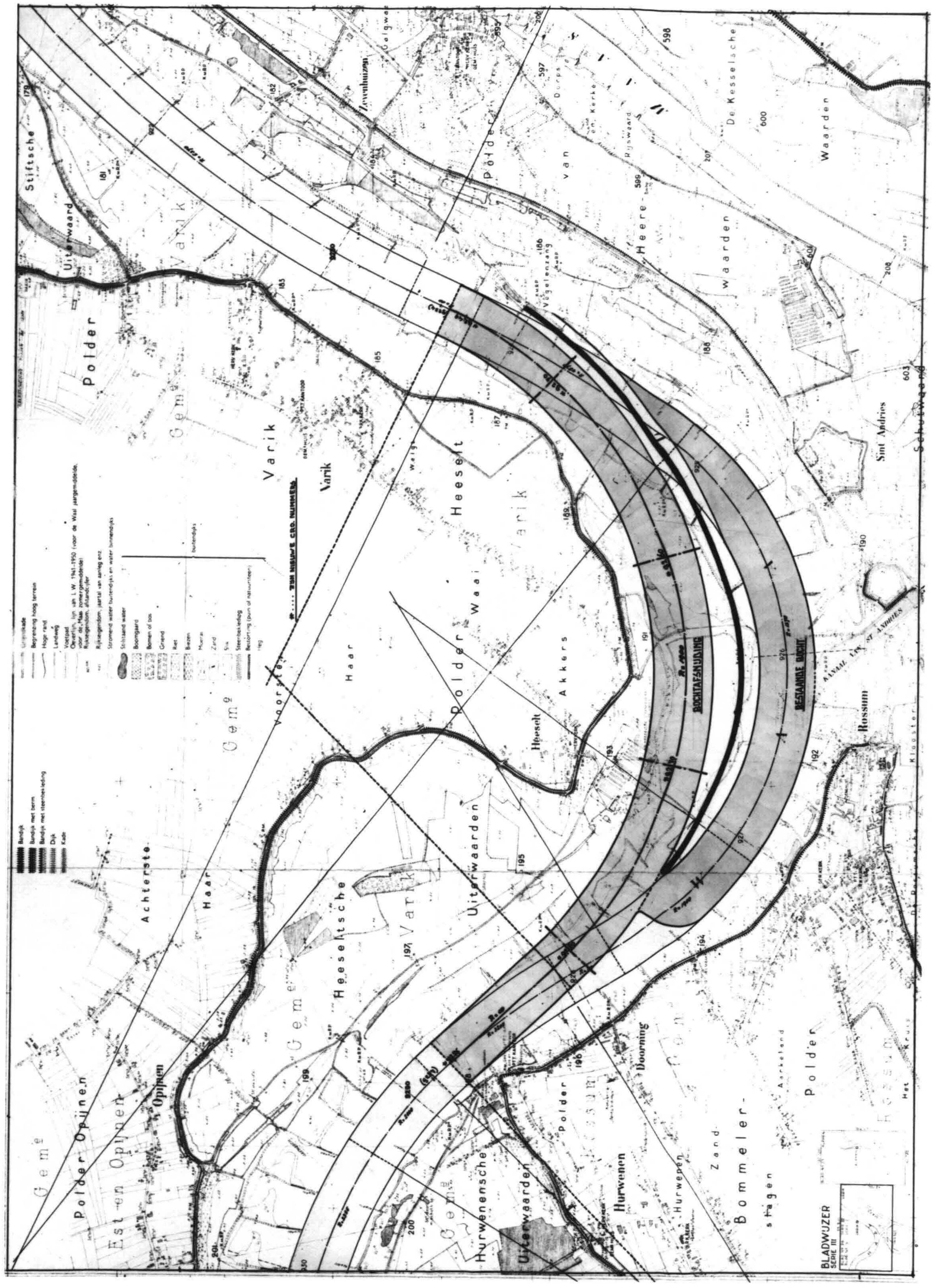



Polder Opijnen
Est en Opijnen
Opijnen
Varik
Heeselt
Polder Waal
Haar
Akkers
Uiterwaarden
Heeseltsche
Hurwenensche
Hurwenen
Doorning
Bommeler-
waarden
Rossum
Sint Andries
Zevenhuizen
Stiftsche
Uiterwaard
De Kesselsche
Waarden
Heere-
BOCHTAFSNIJDING
BESTAANDE BOCHT
KANAAL VAN ST. ANDRIES
BLADWIJZER
SERIE III

BIJLAGE 10

DWARSPROFIELEN

BOCHTAFSNYDING ST. ANDRIES

R = 1900 m

km 922^{A} +/m km 932^{G}

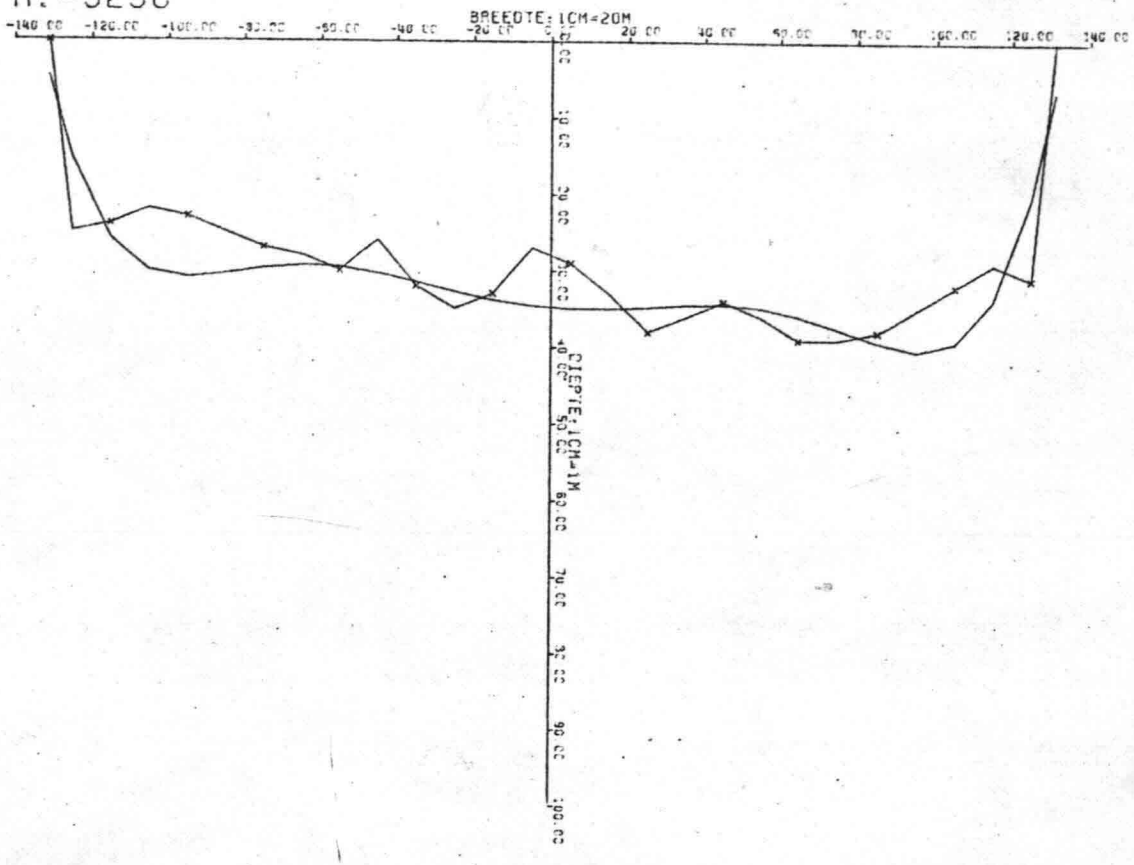
—×———×———×— Bestaande dwarsprofiel.

——————————— Berekende dwarsprofiel.

BYLAGE 11

CRD: 9221

R: -5250



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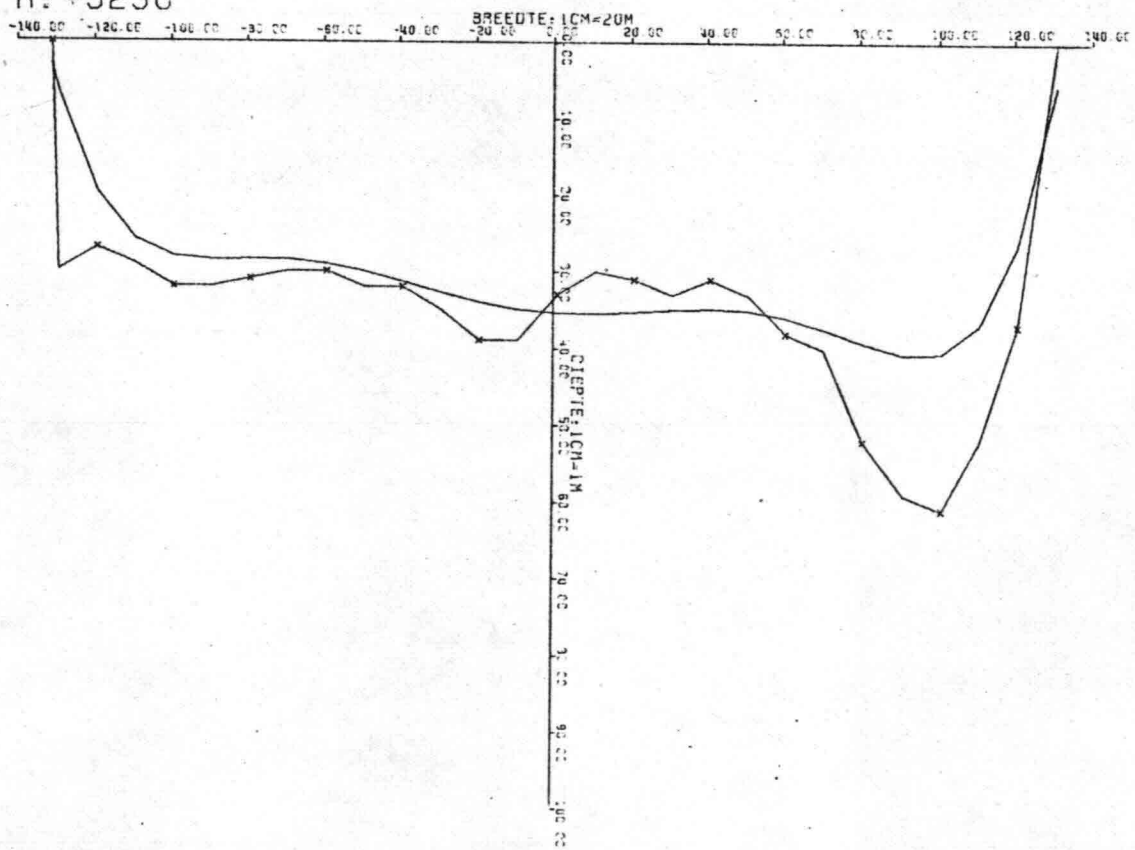

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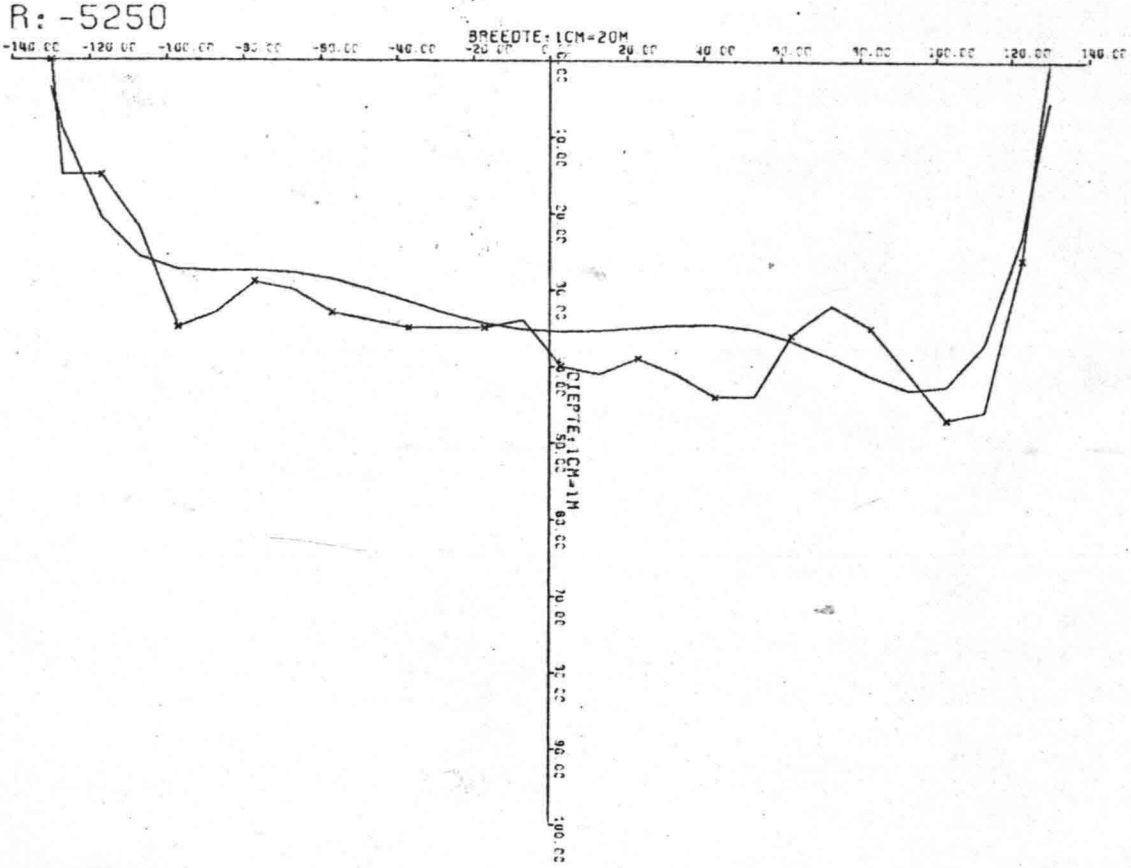

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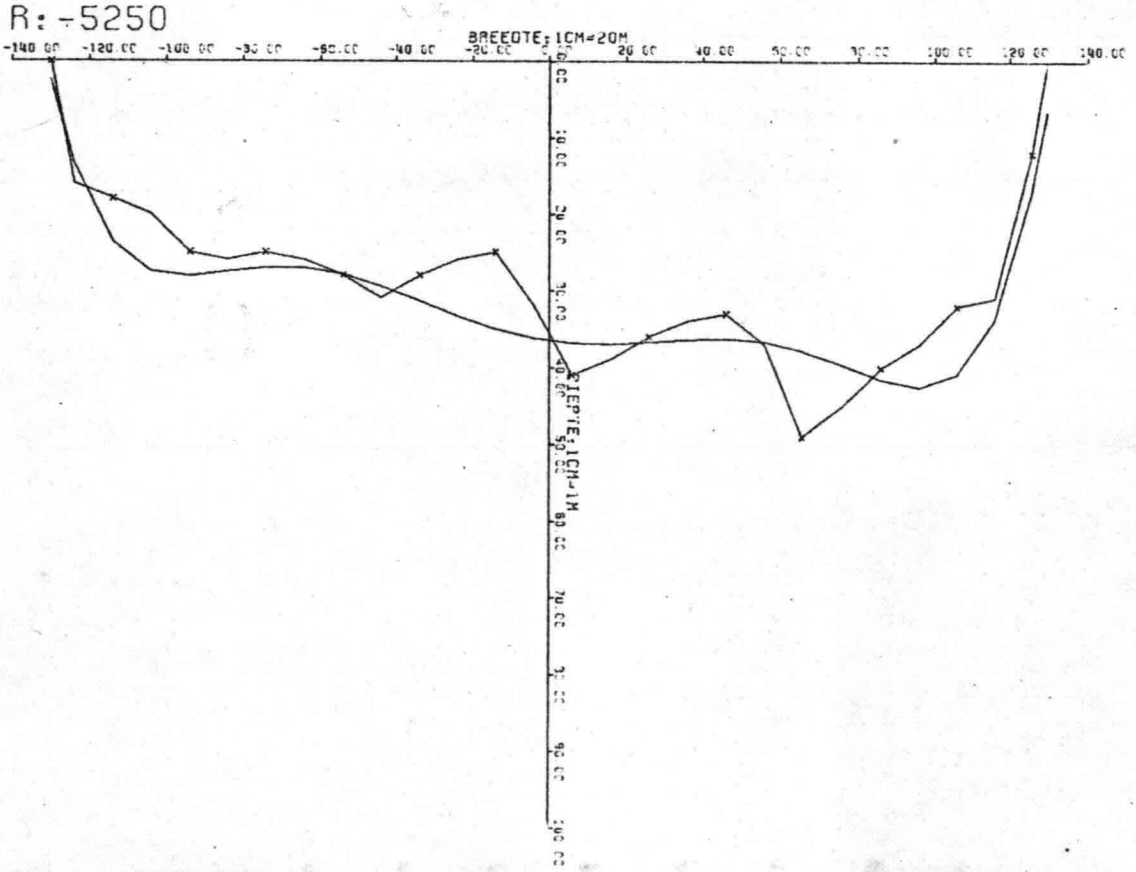
R: -5250



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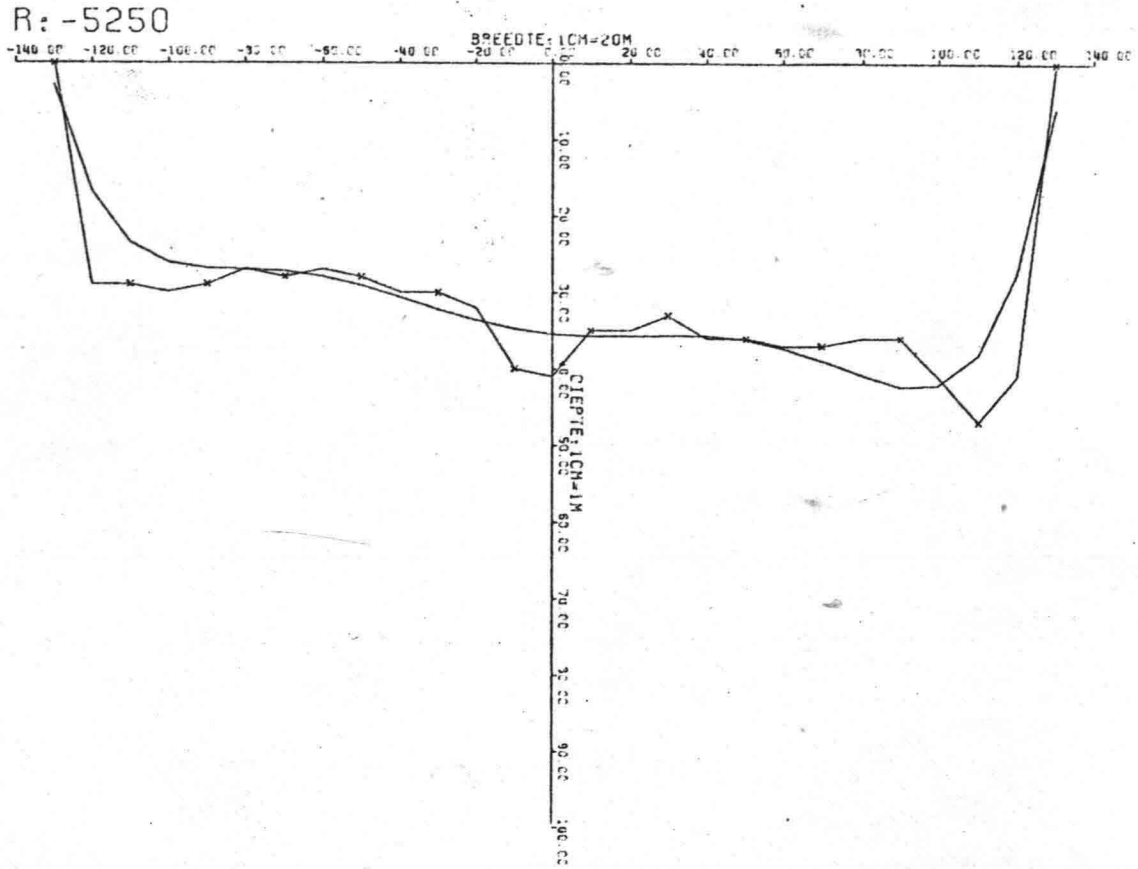
R: -5250



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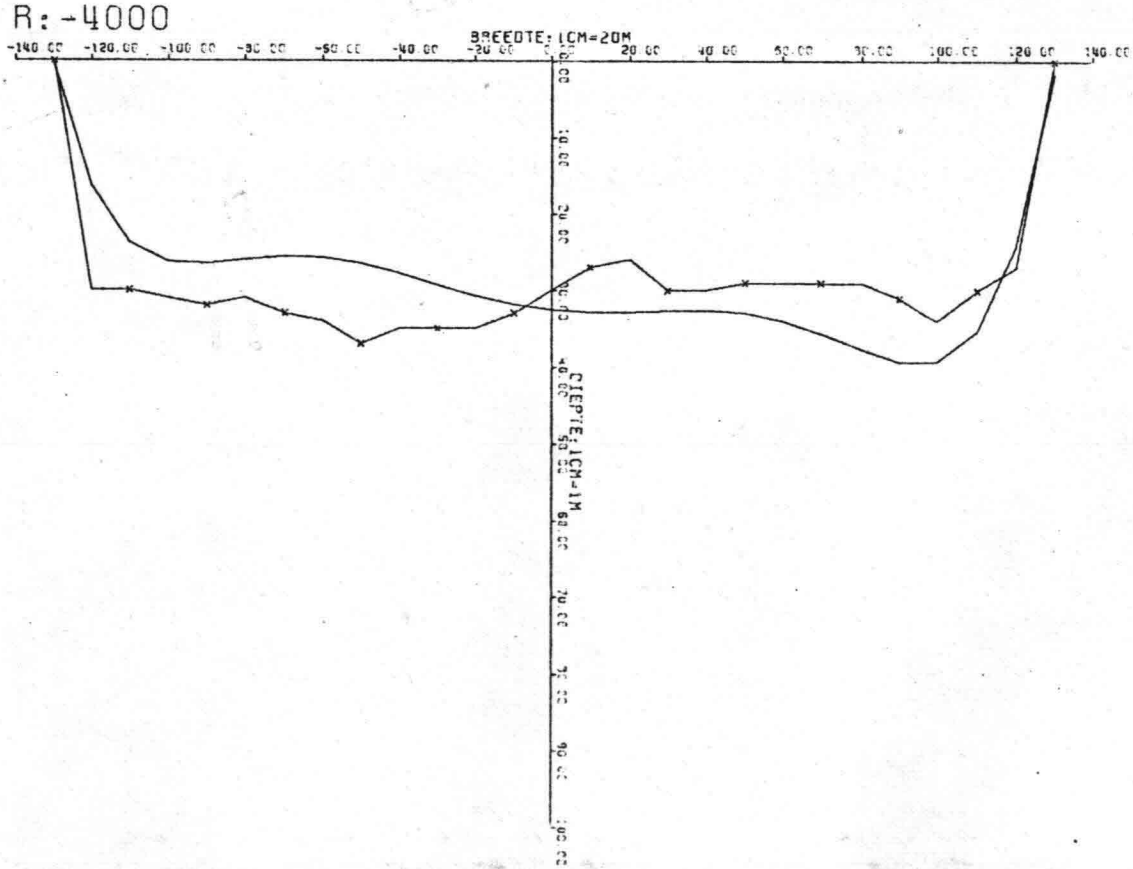

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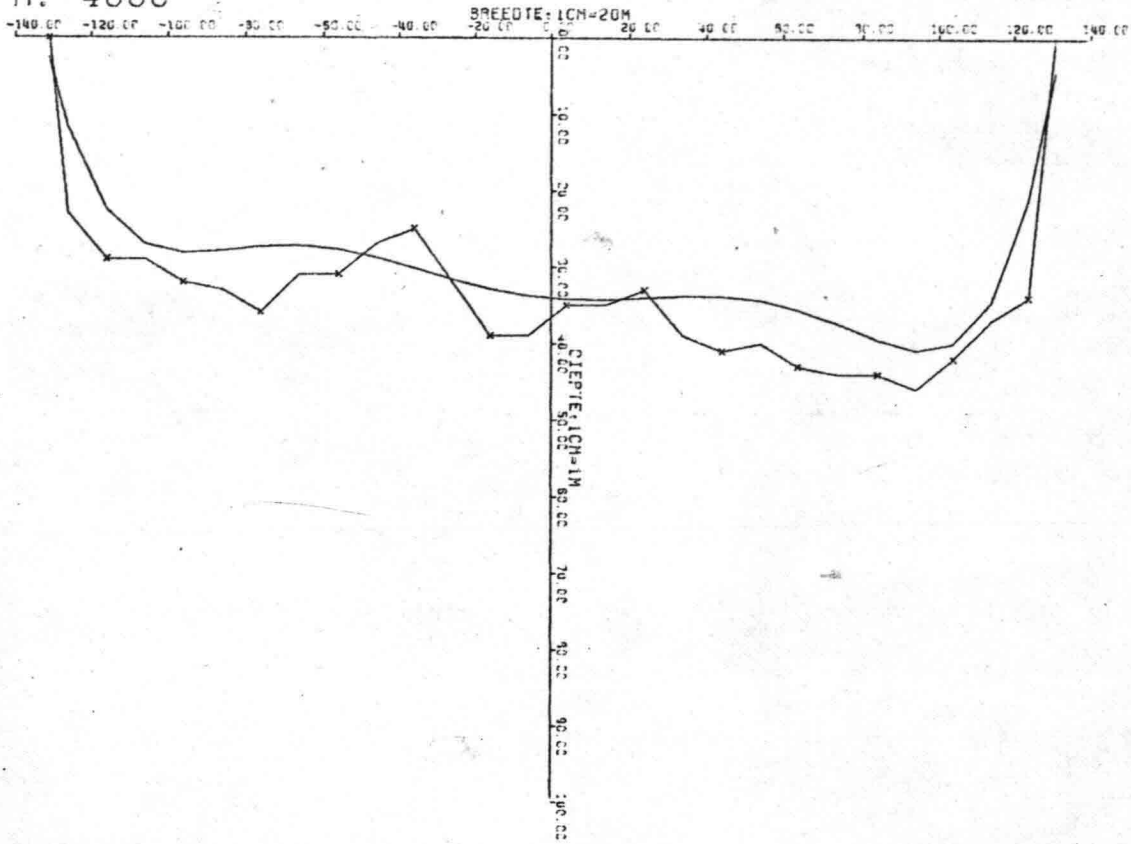

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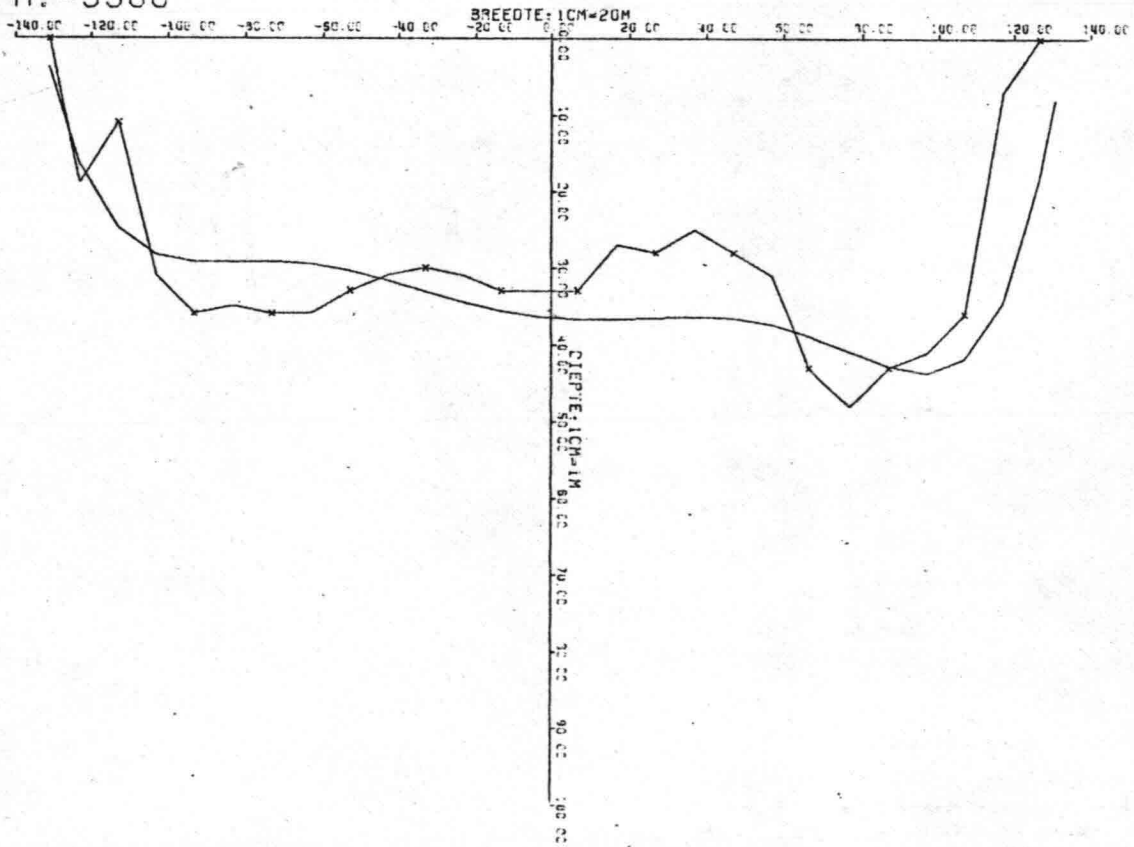

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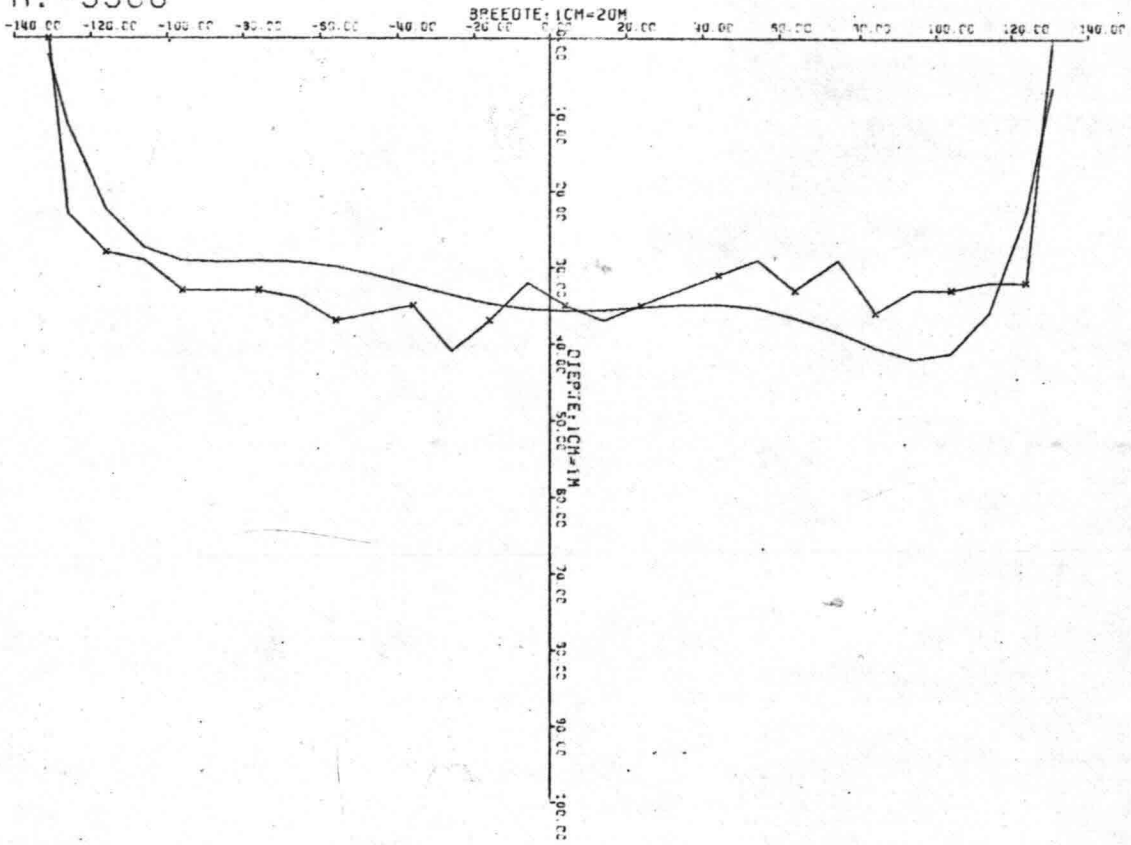

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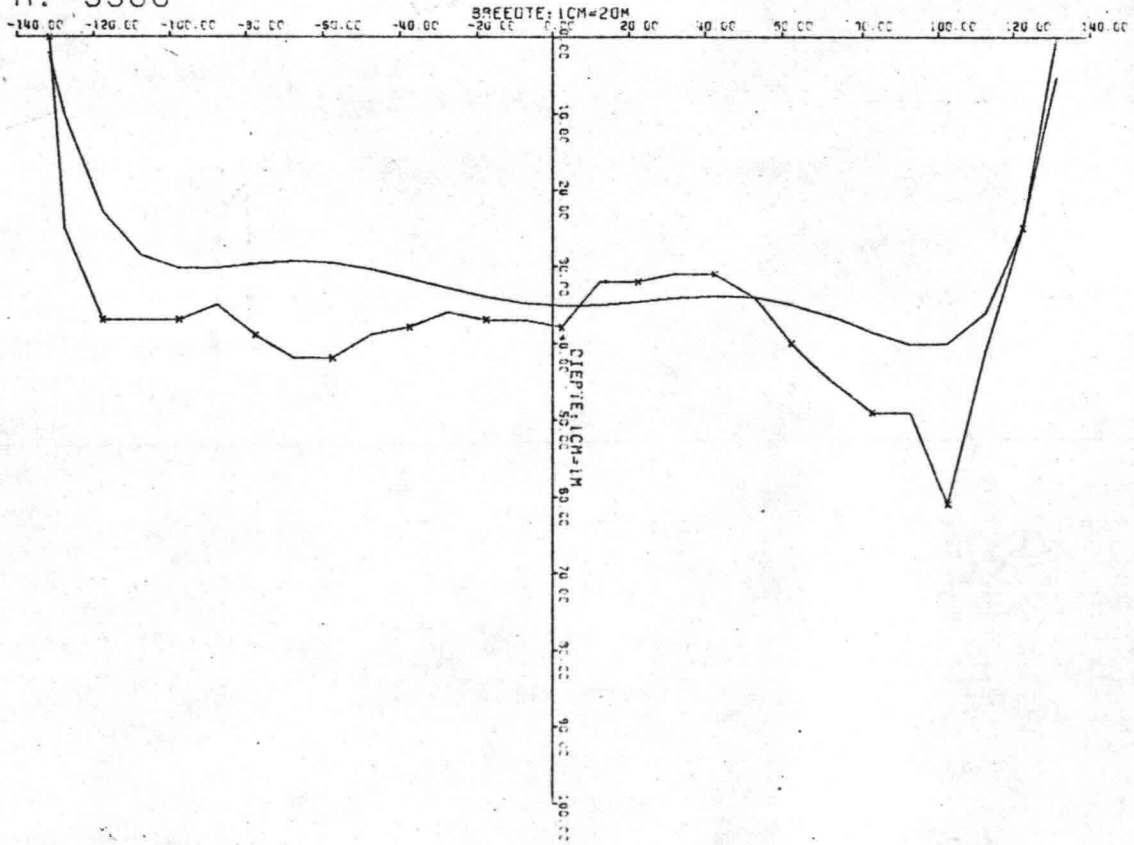

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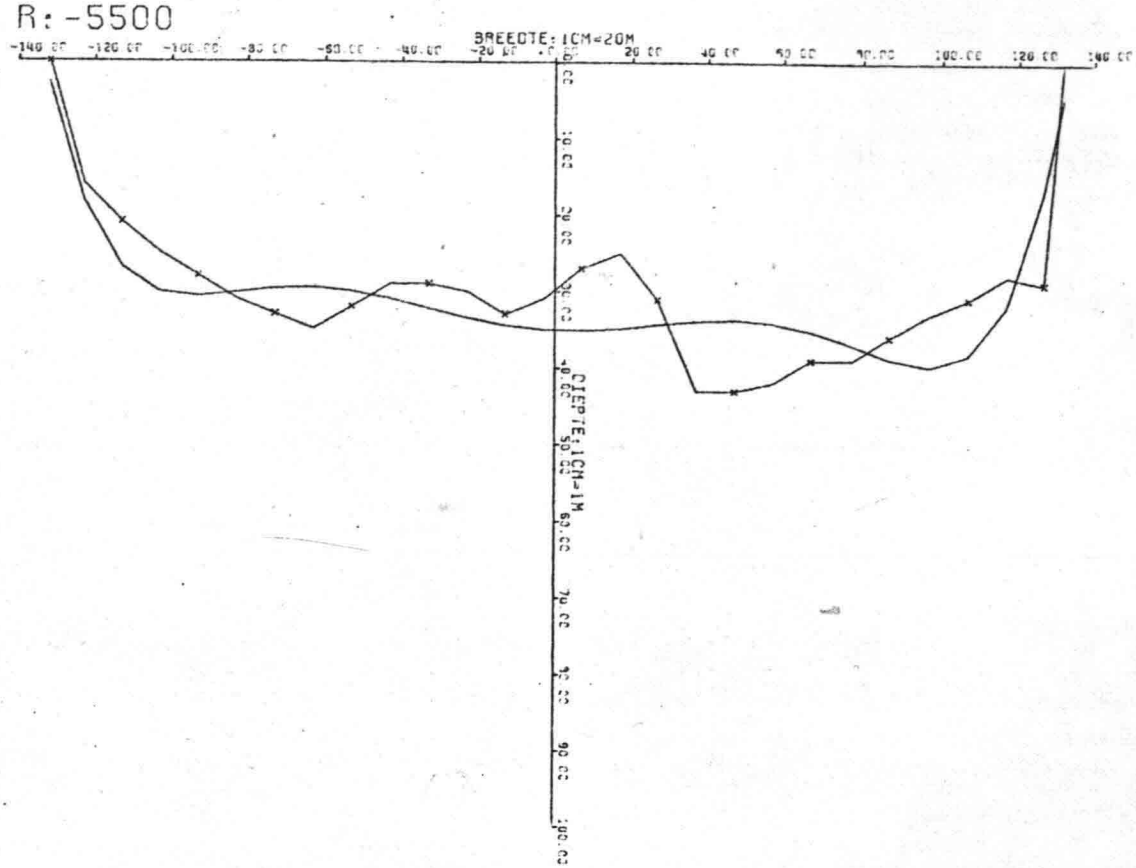

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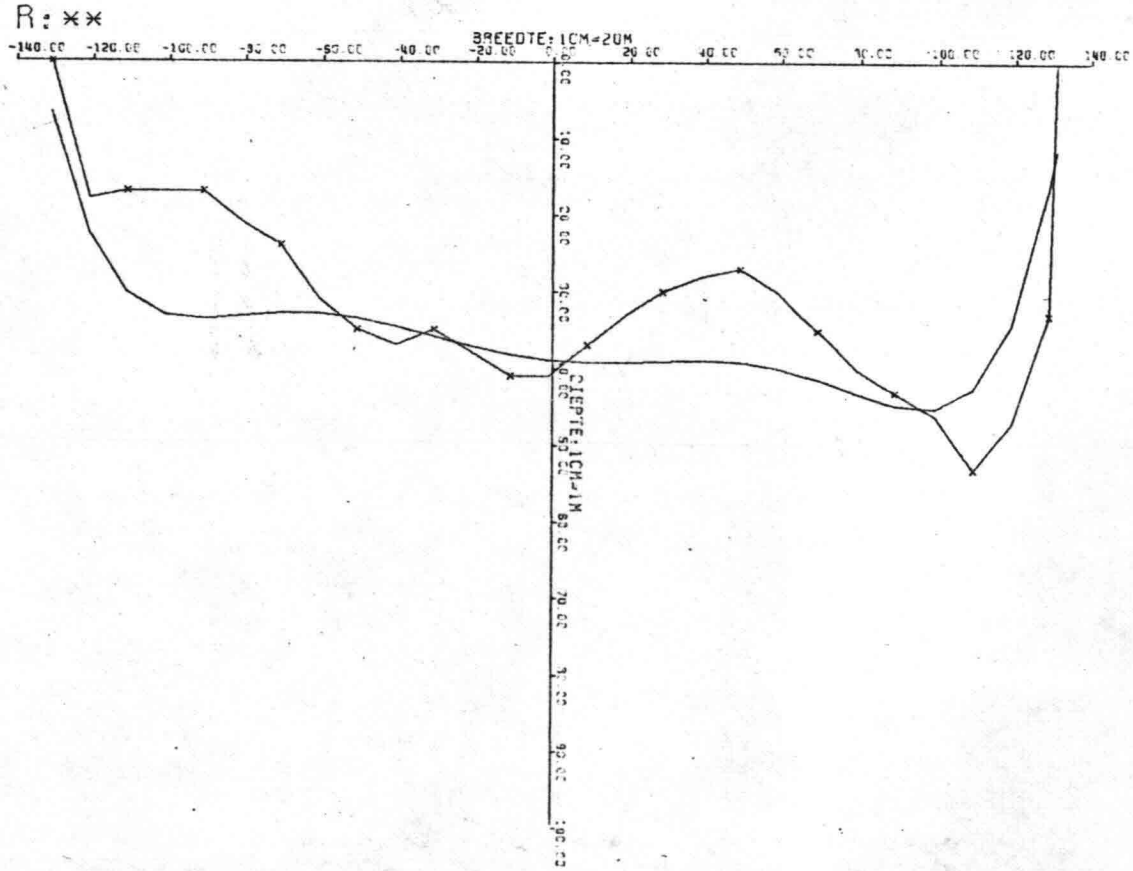
R: **



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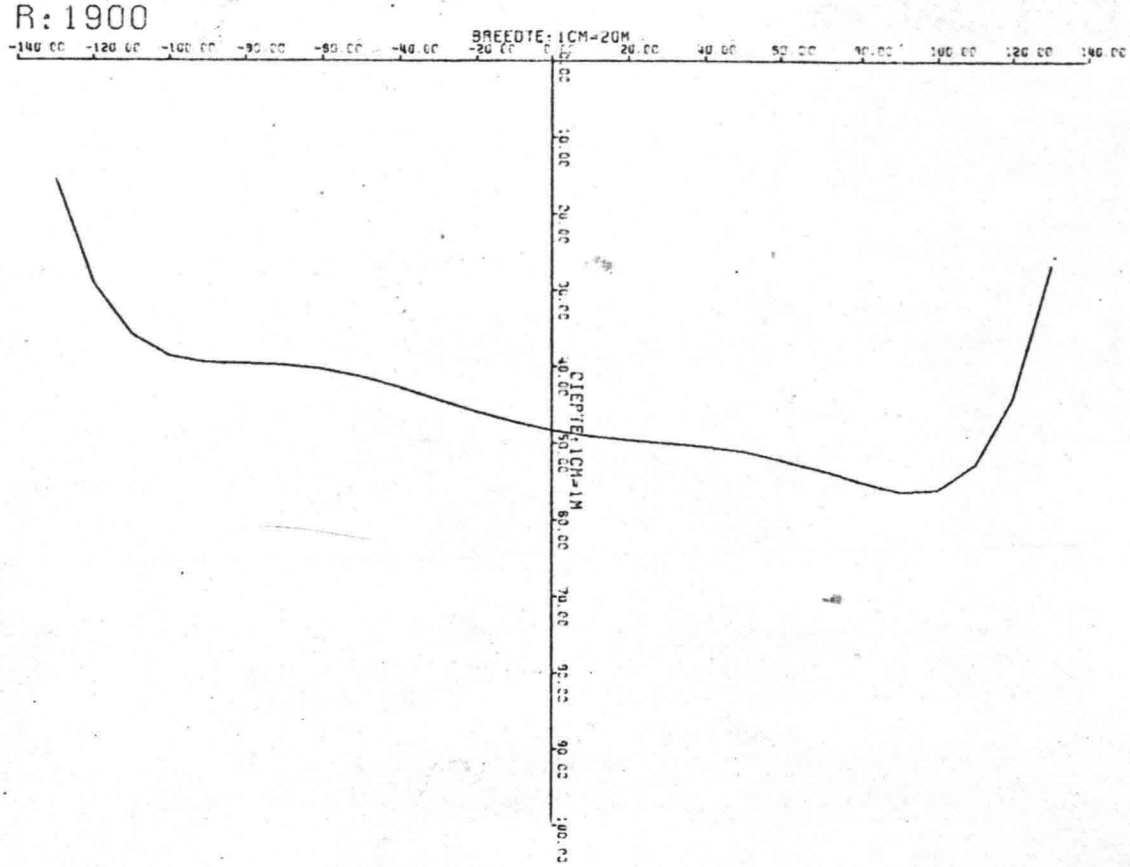
R: 1900



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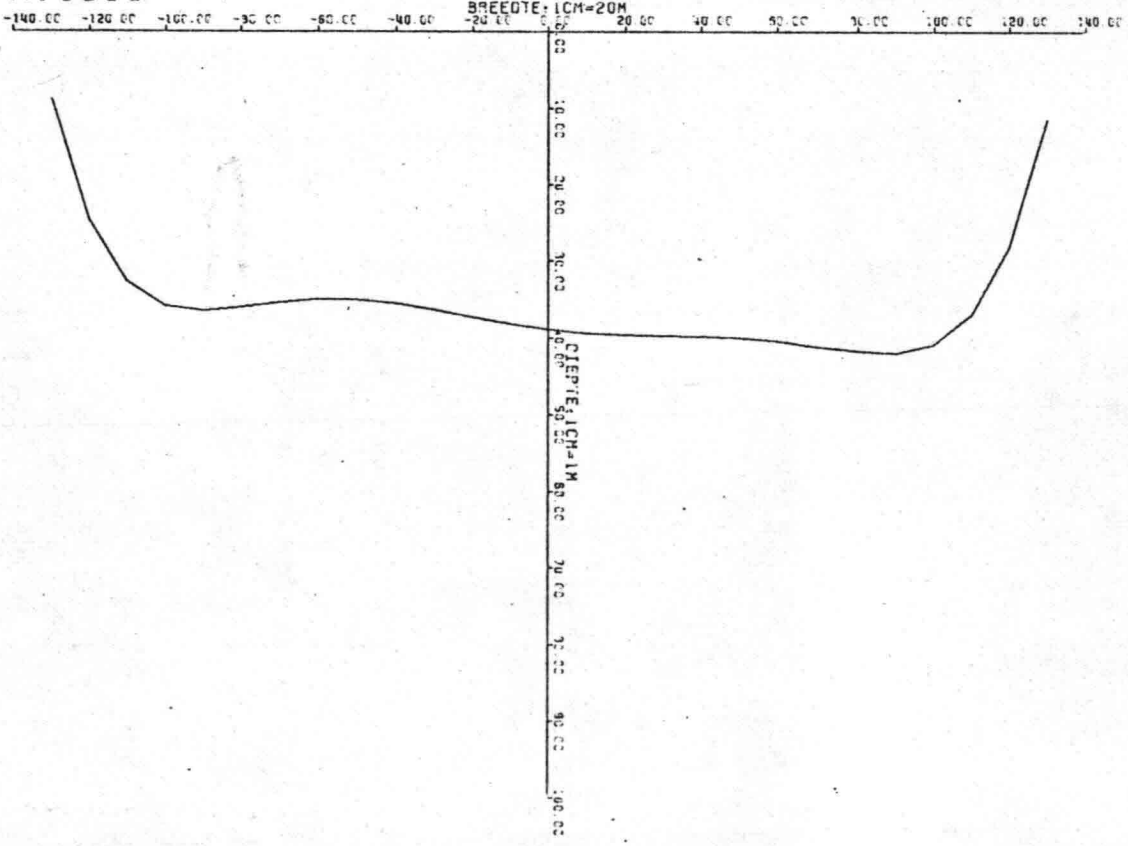

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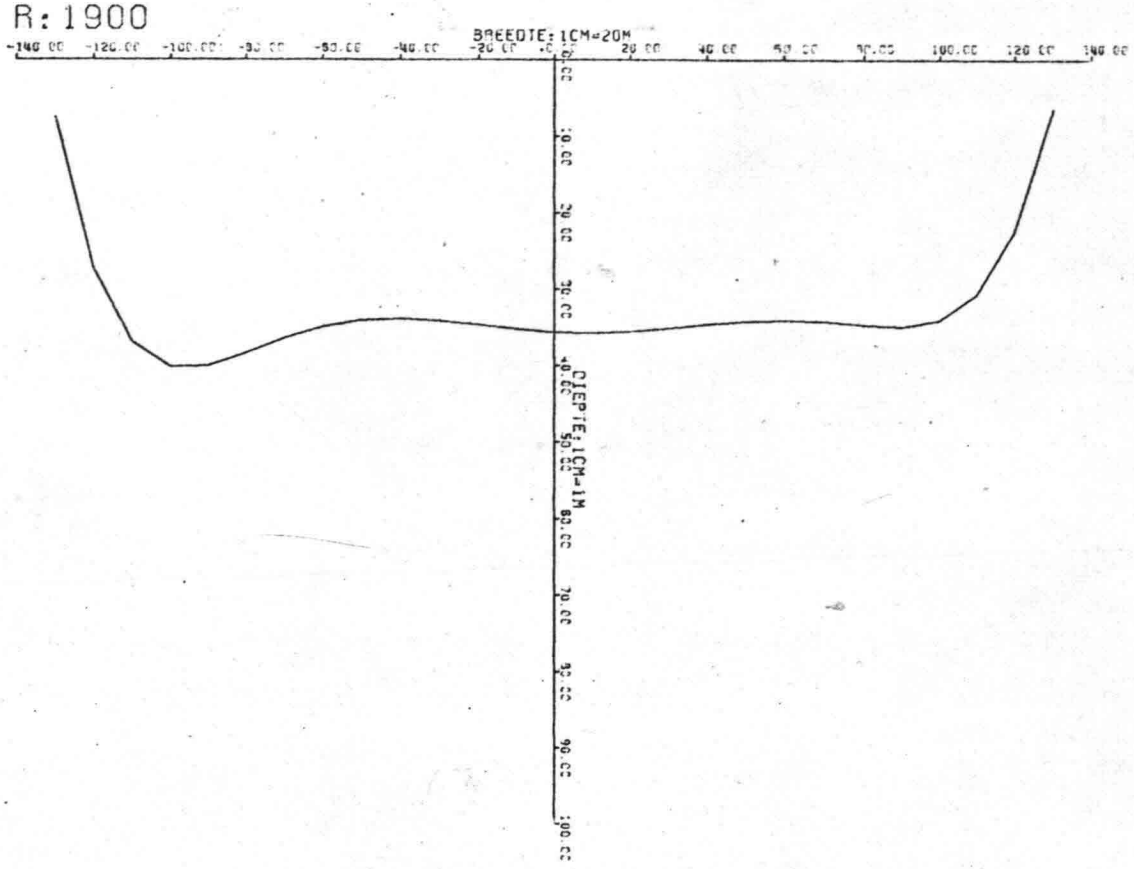

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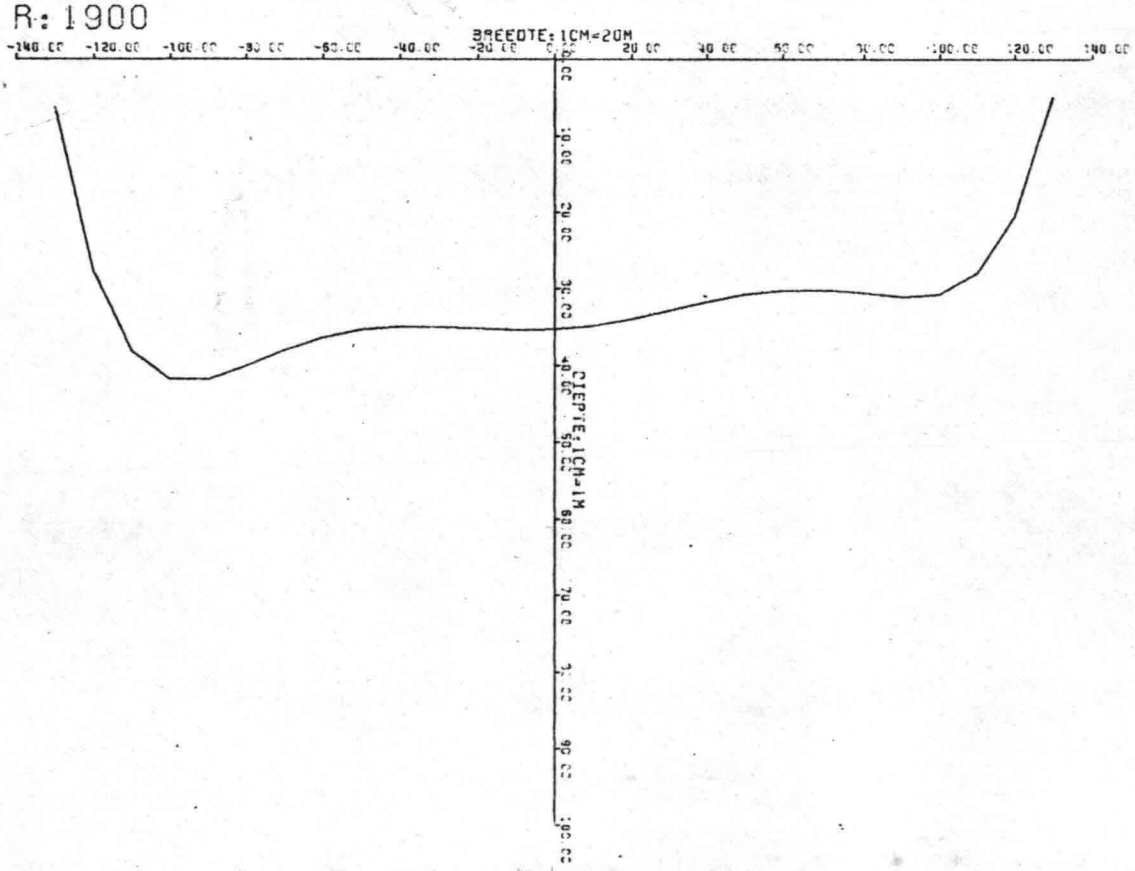

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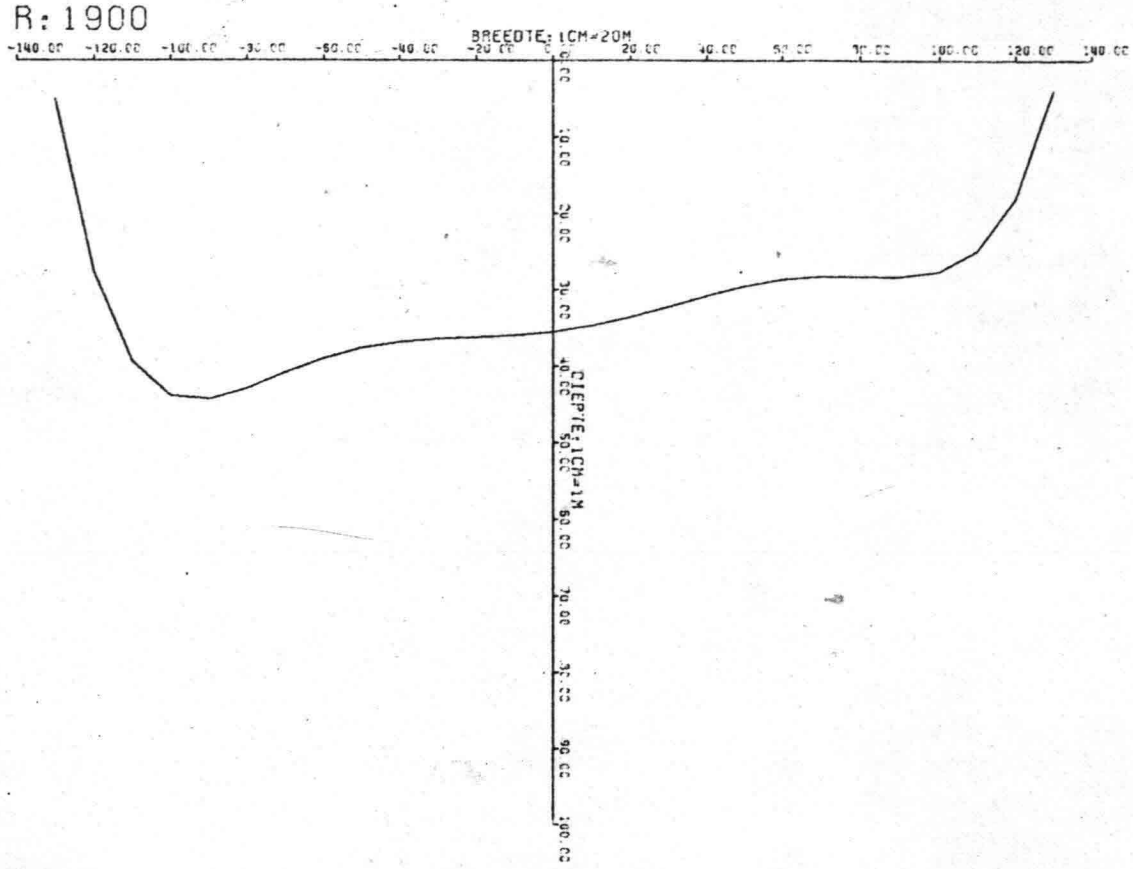

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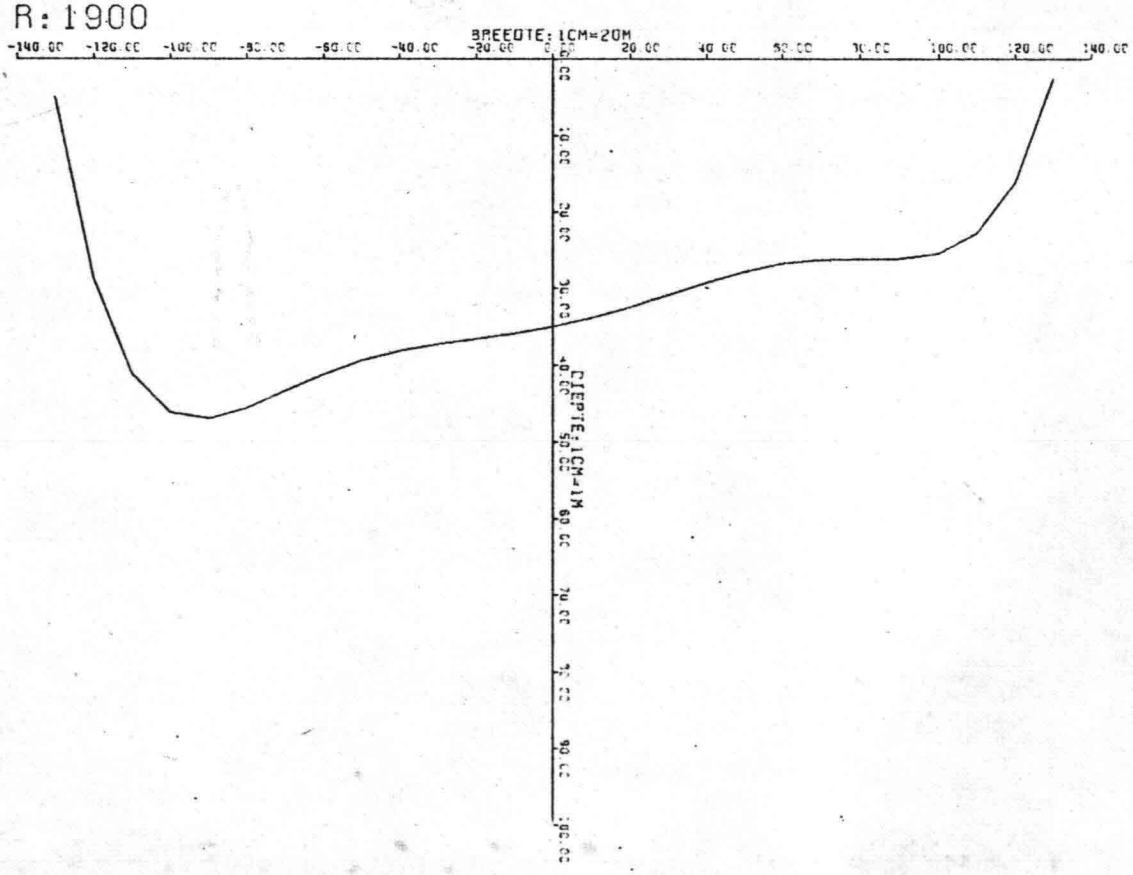

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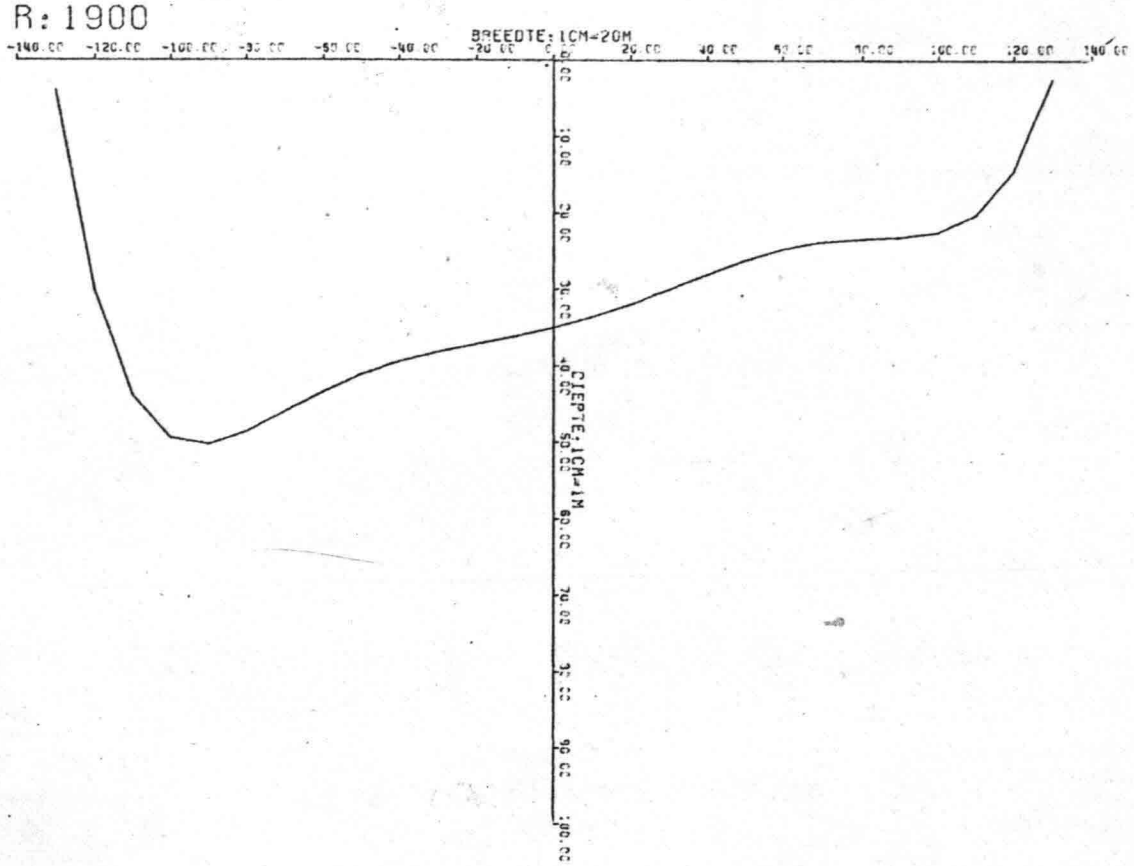

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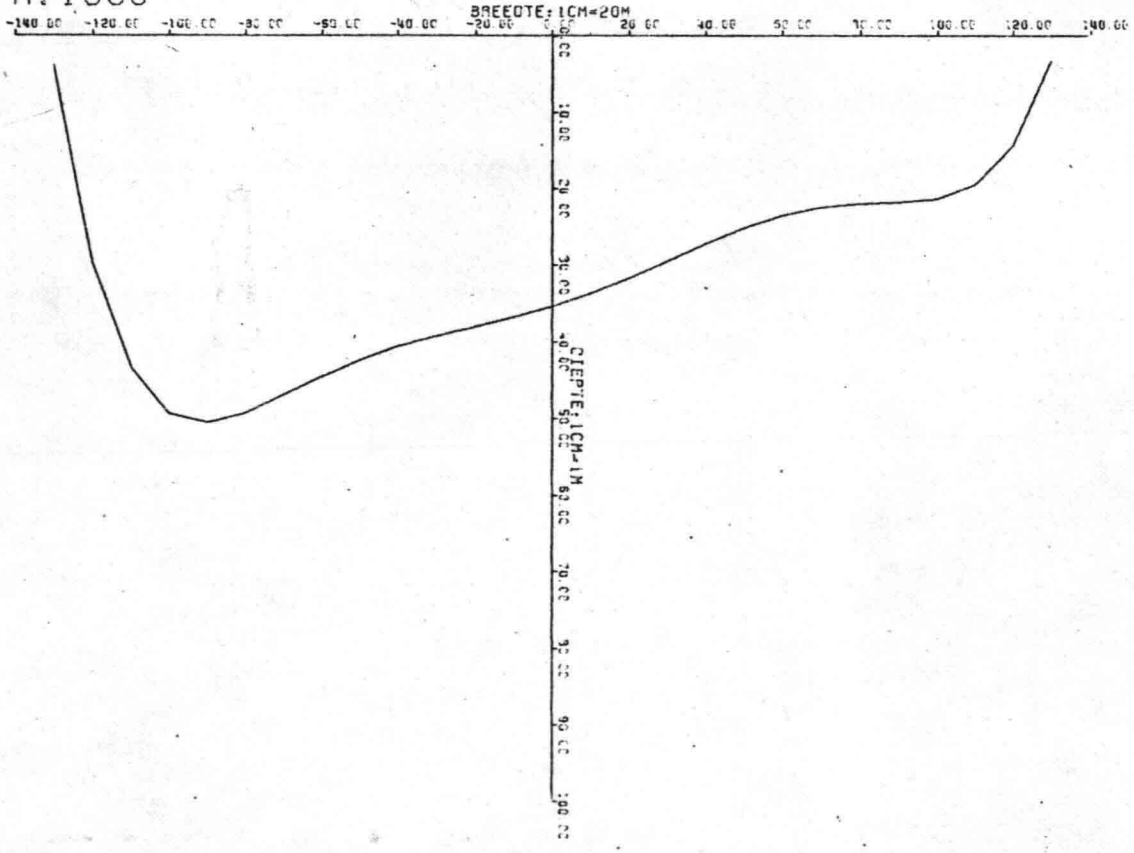

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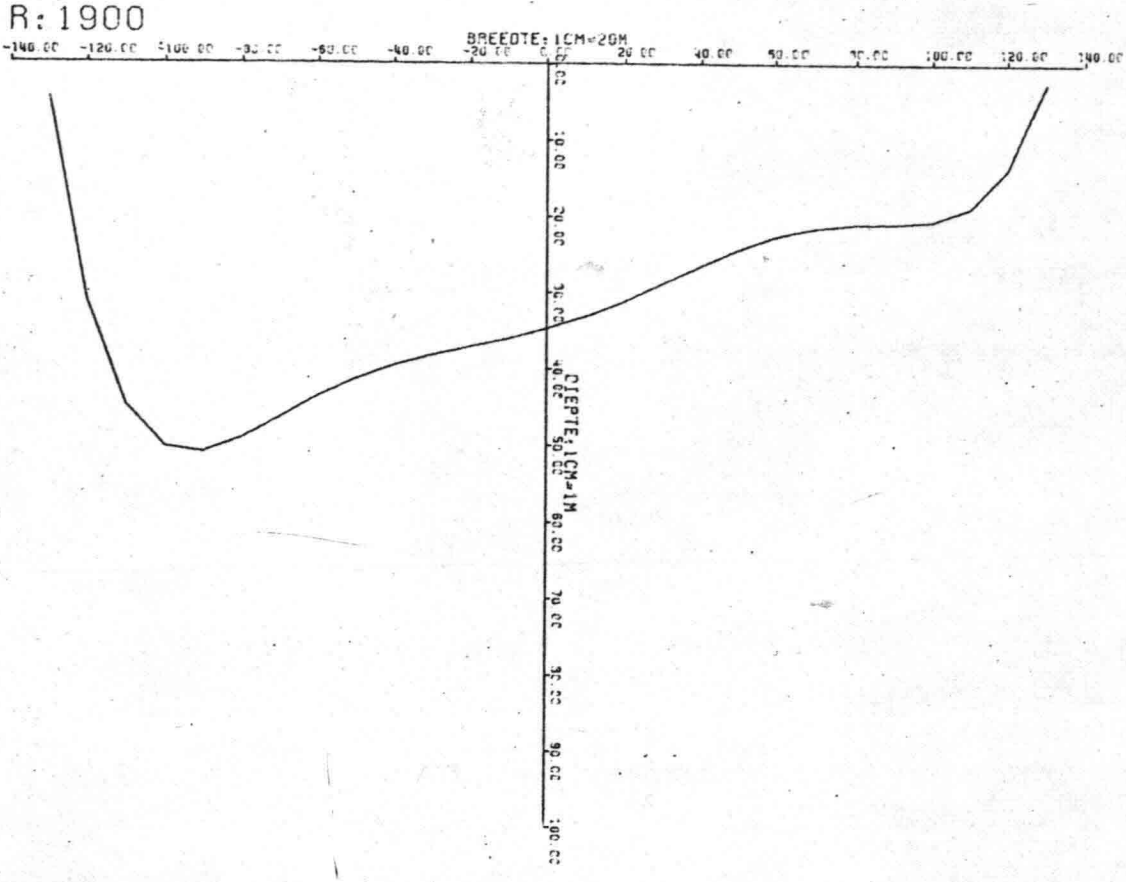

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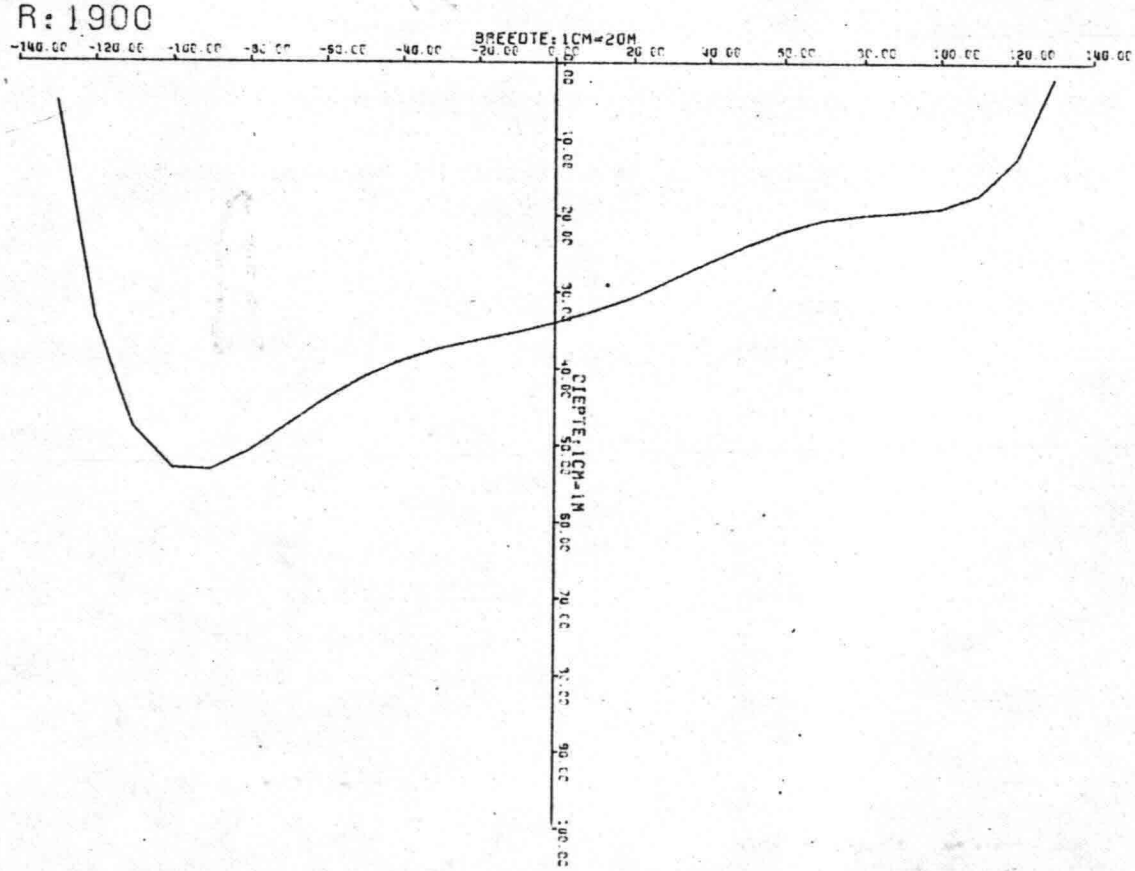

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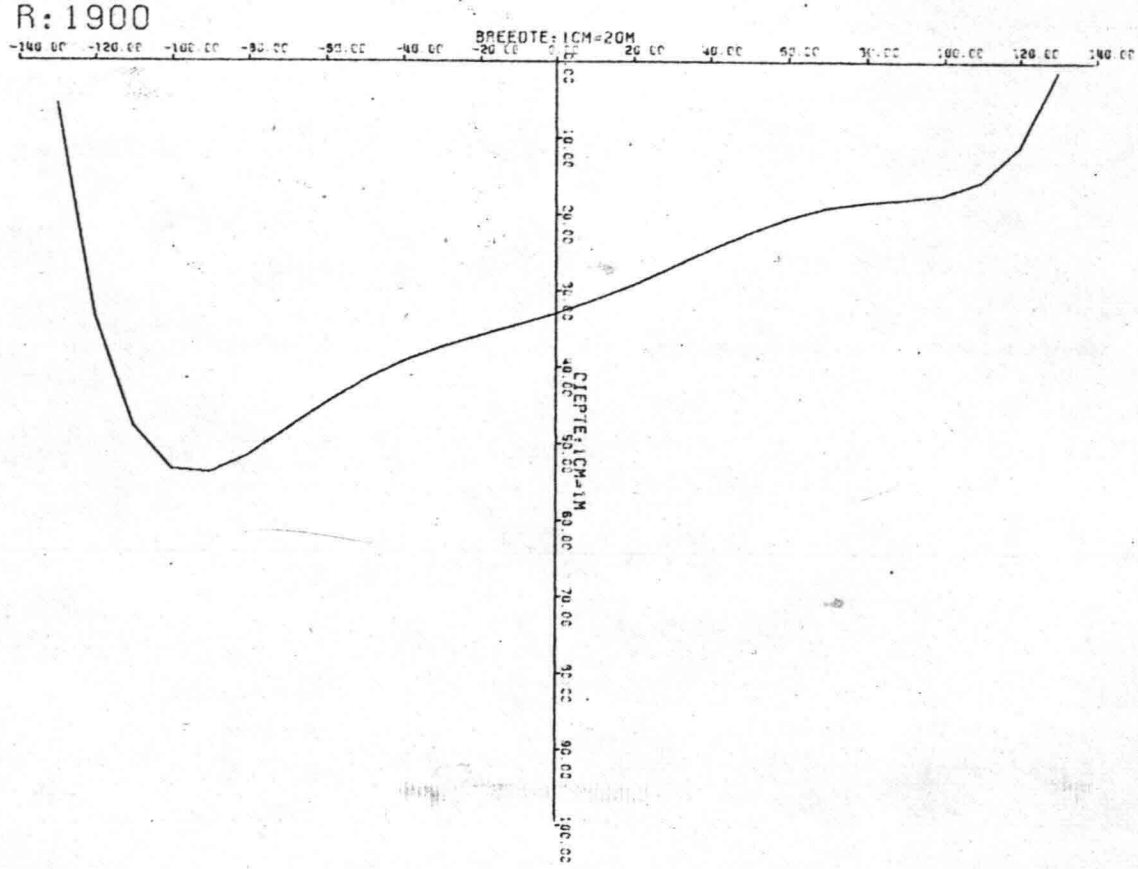

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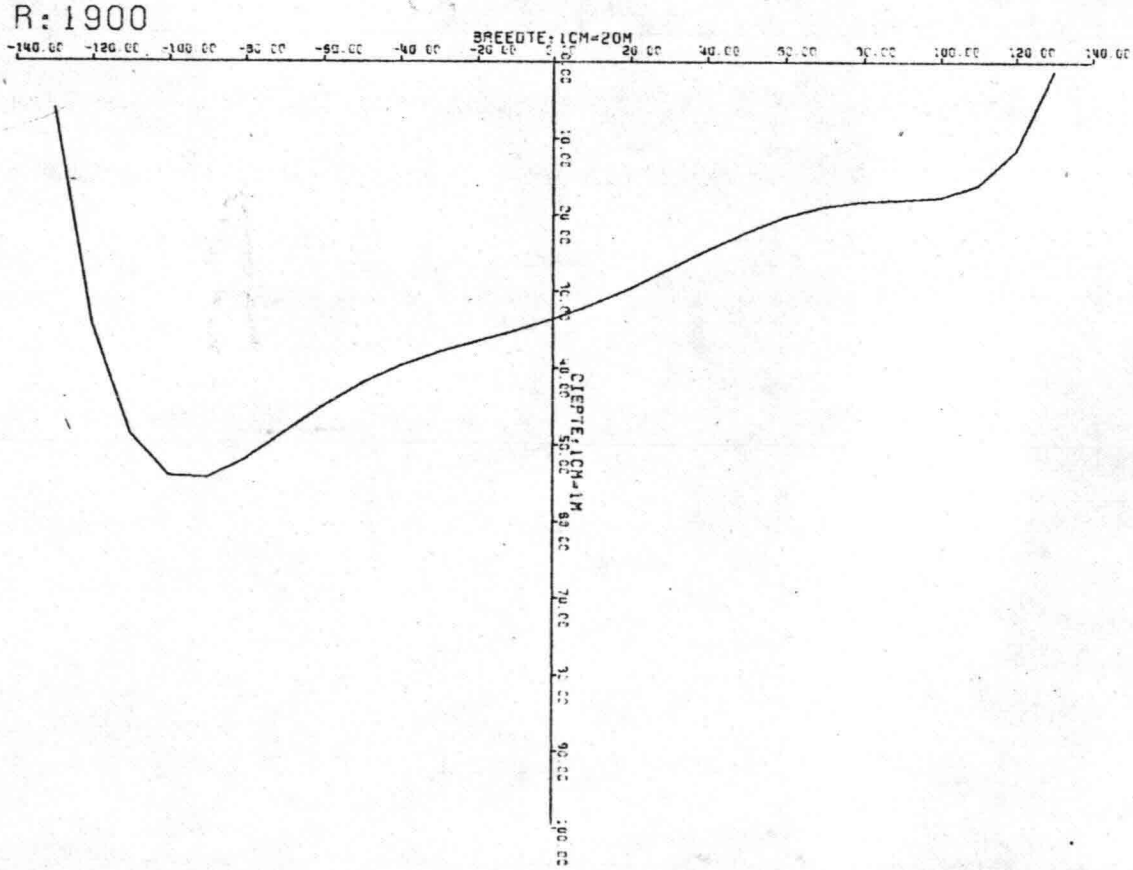

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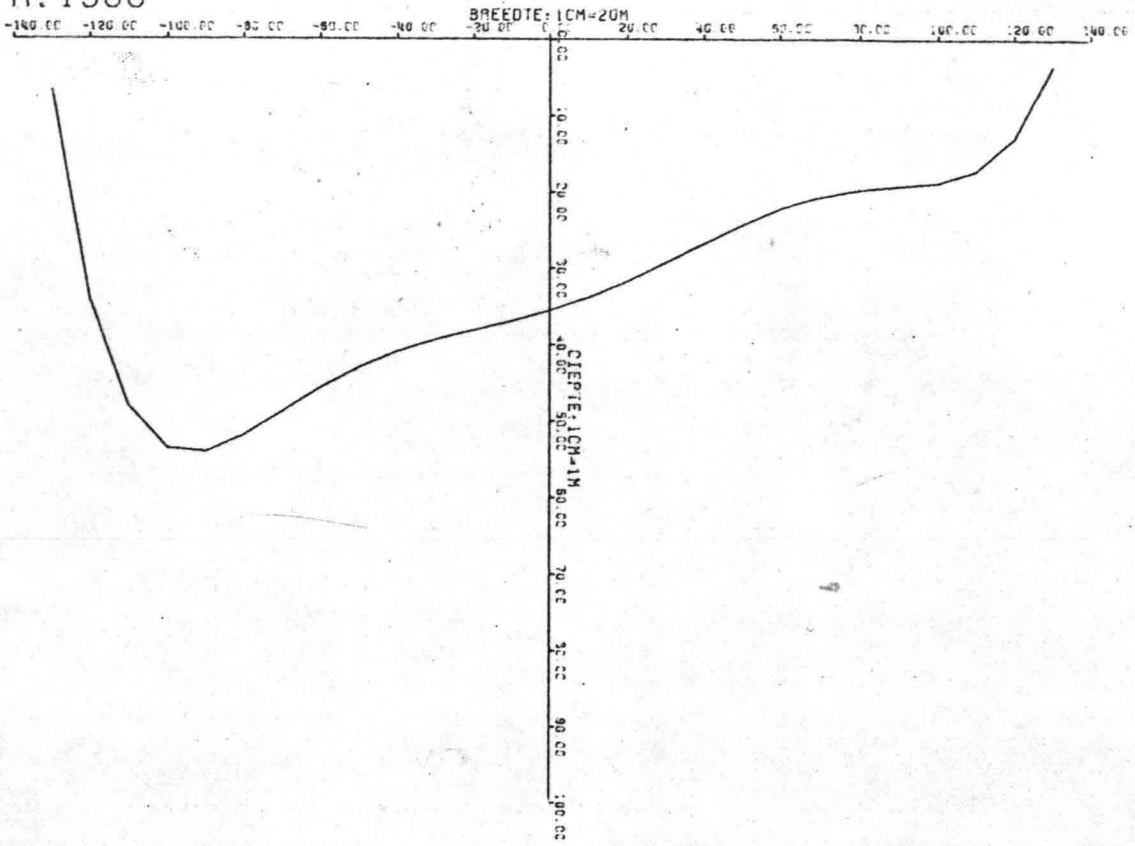

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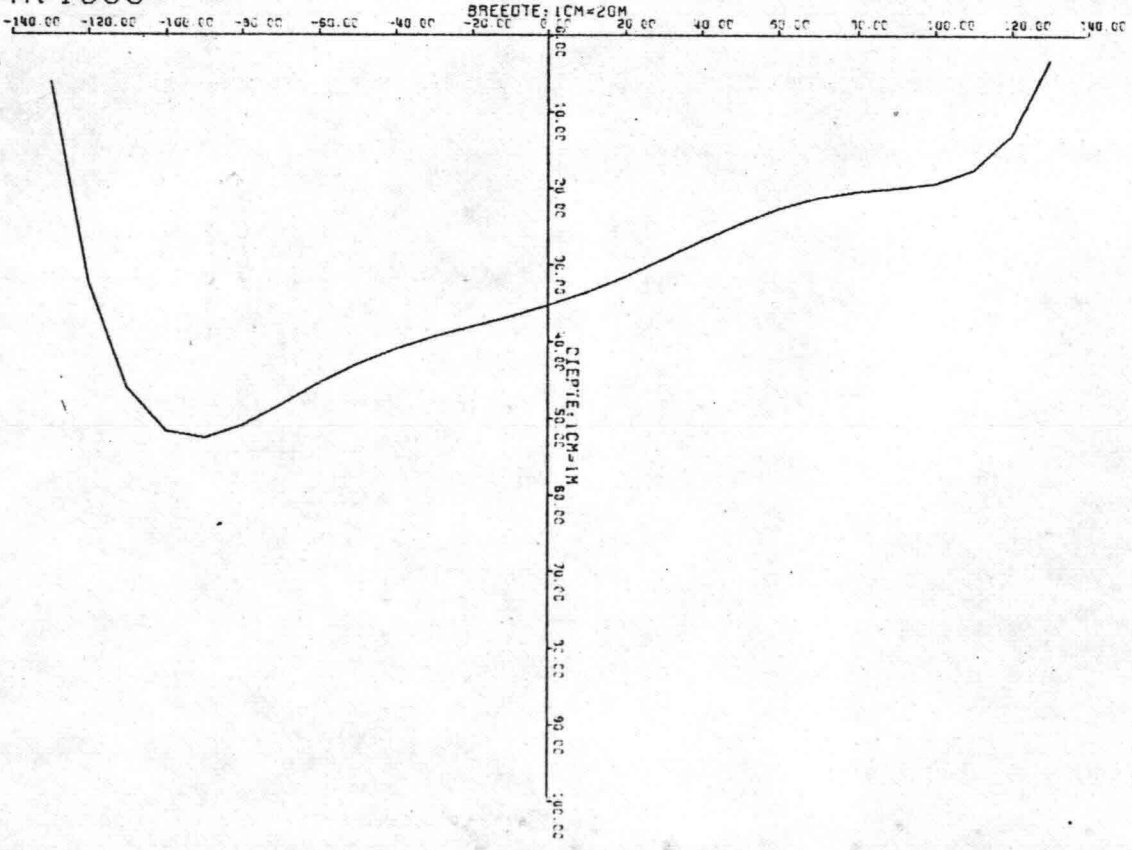

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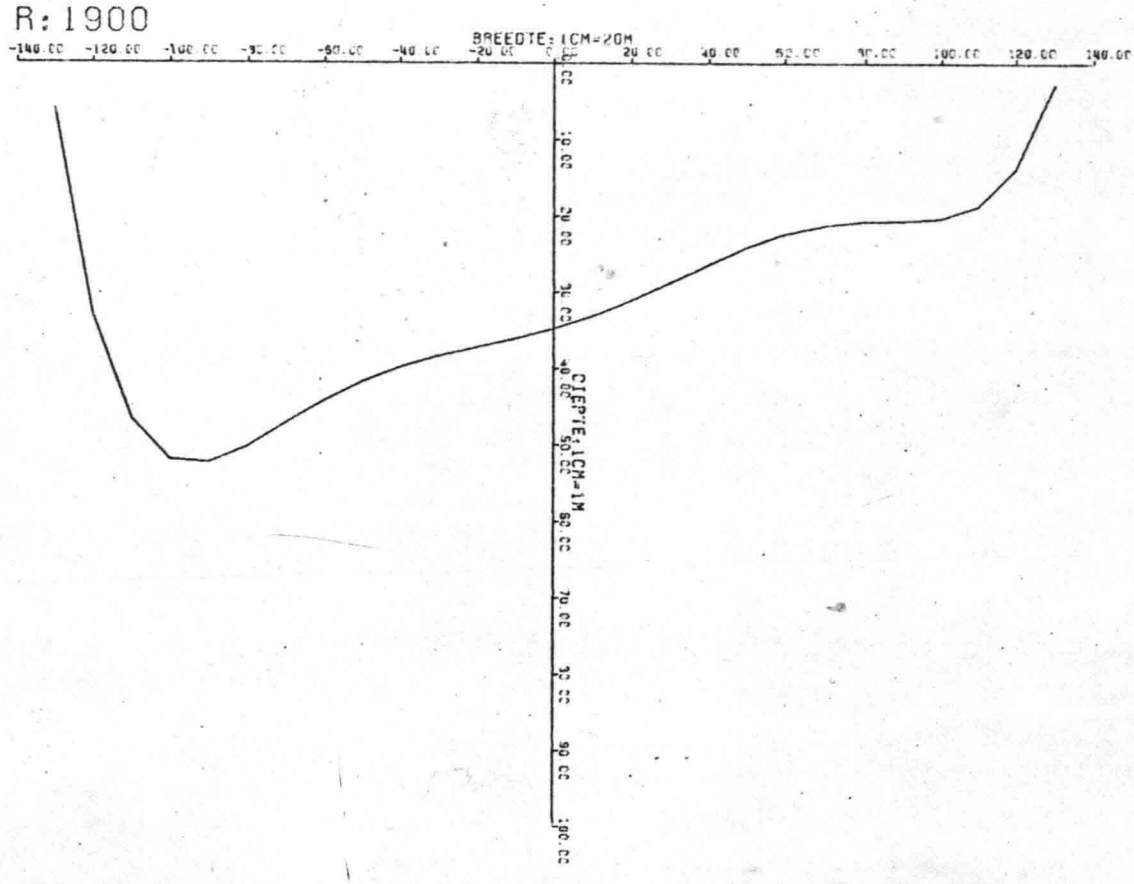

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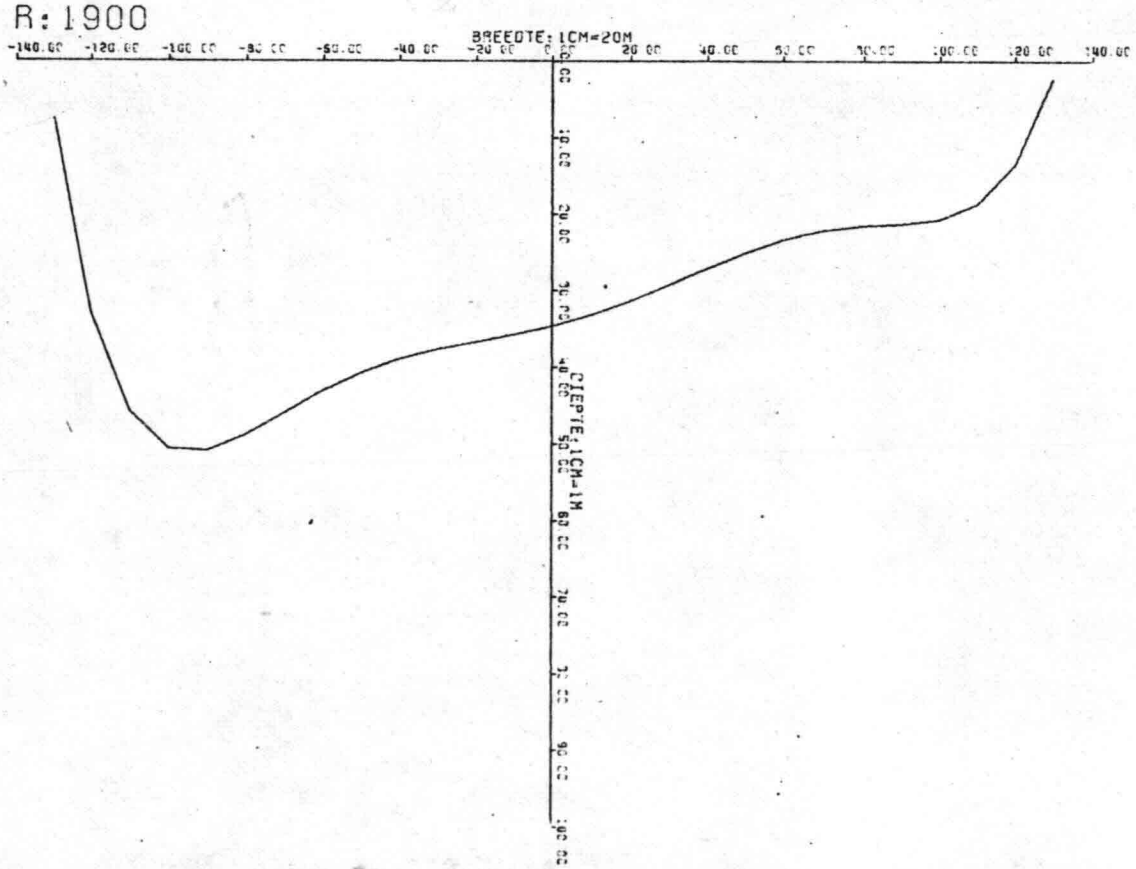

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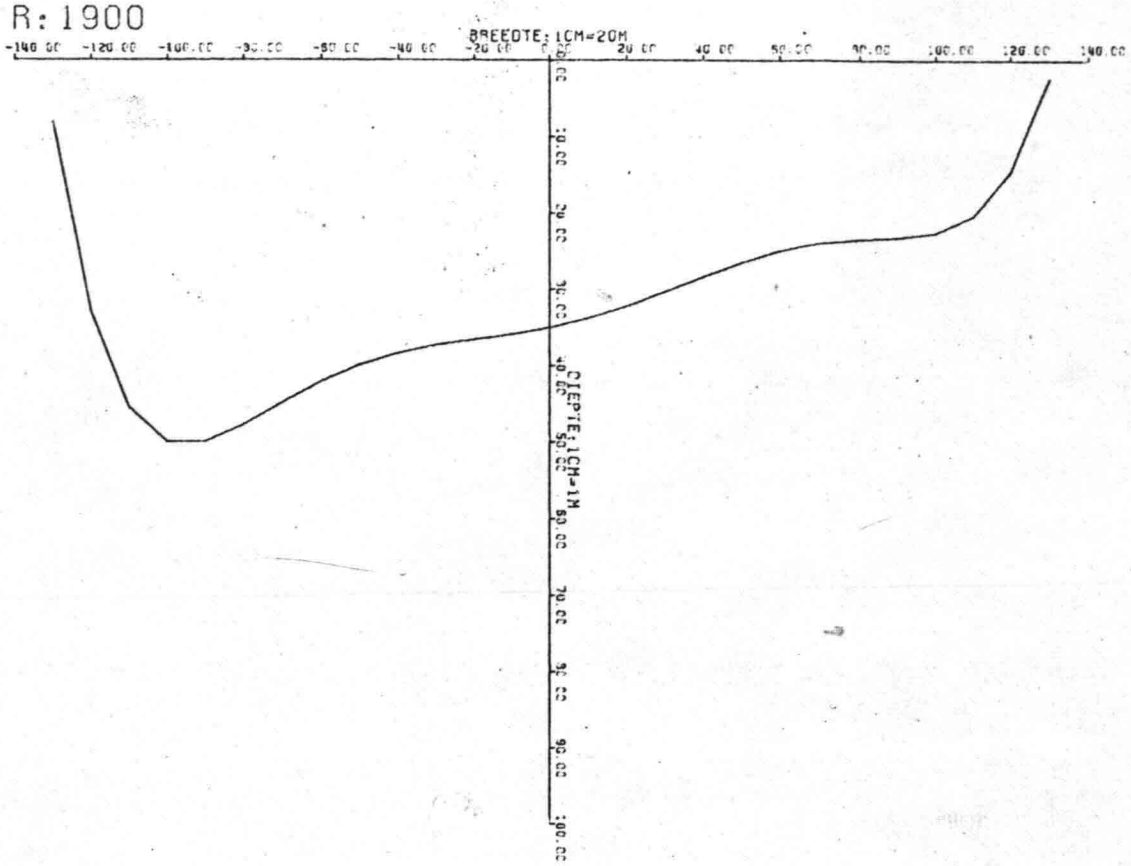

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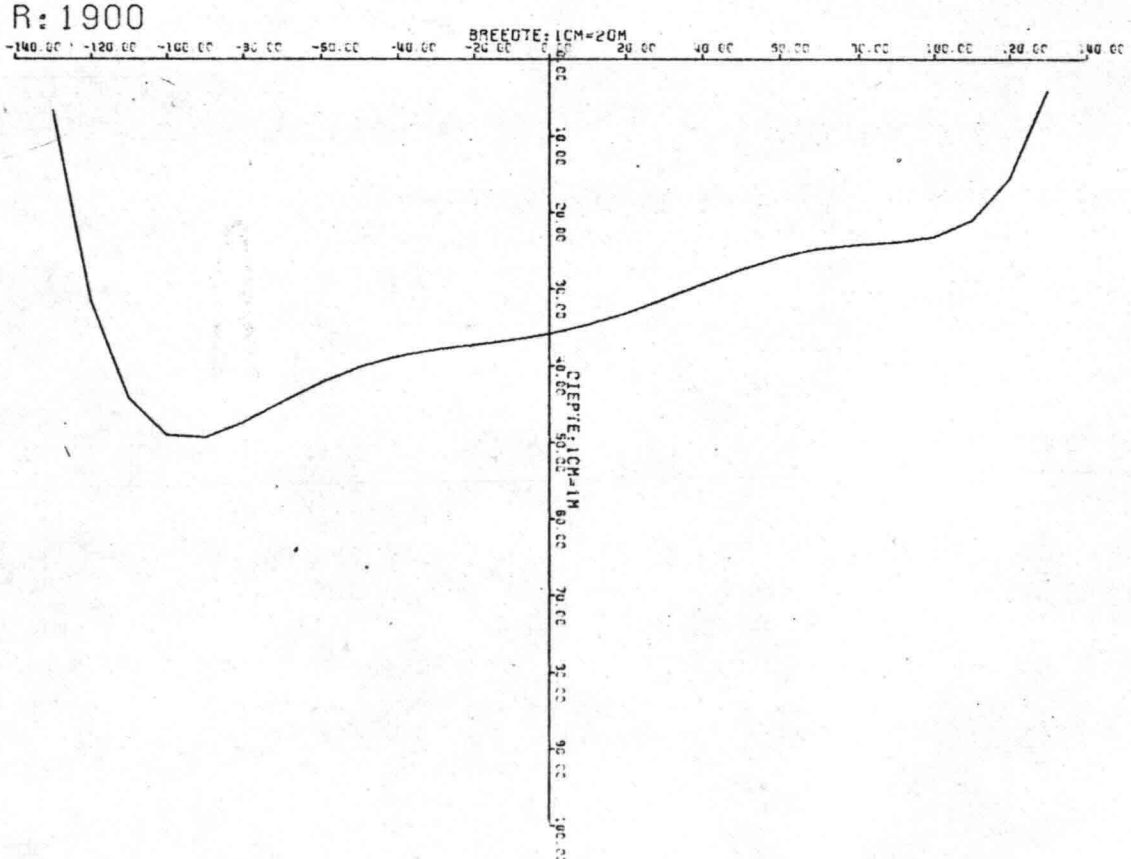
R: 1900



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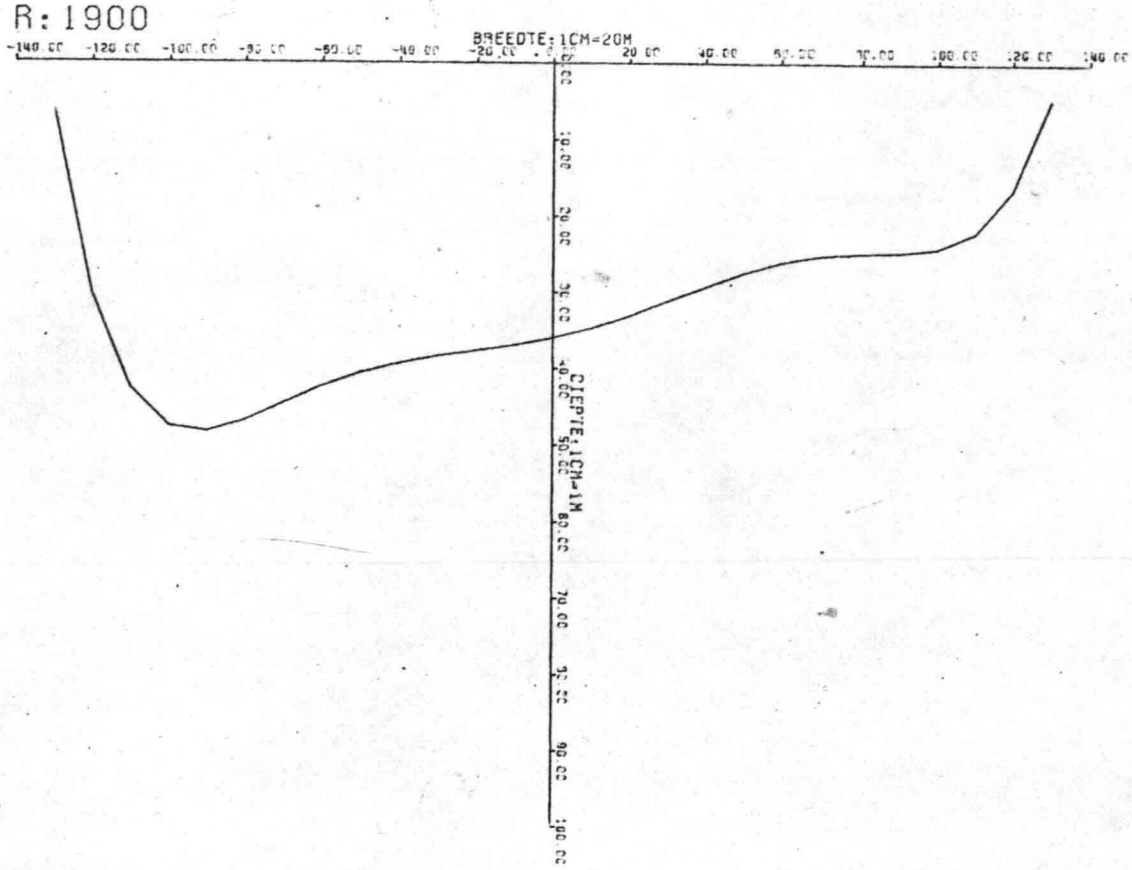

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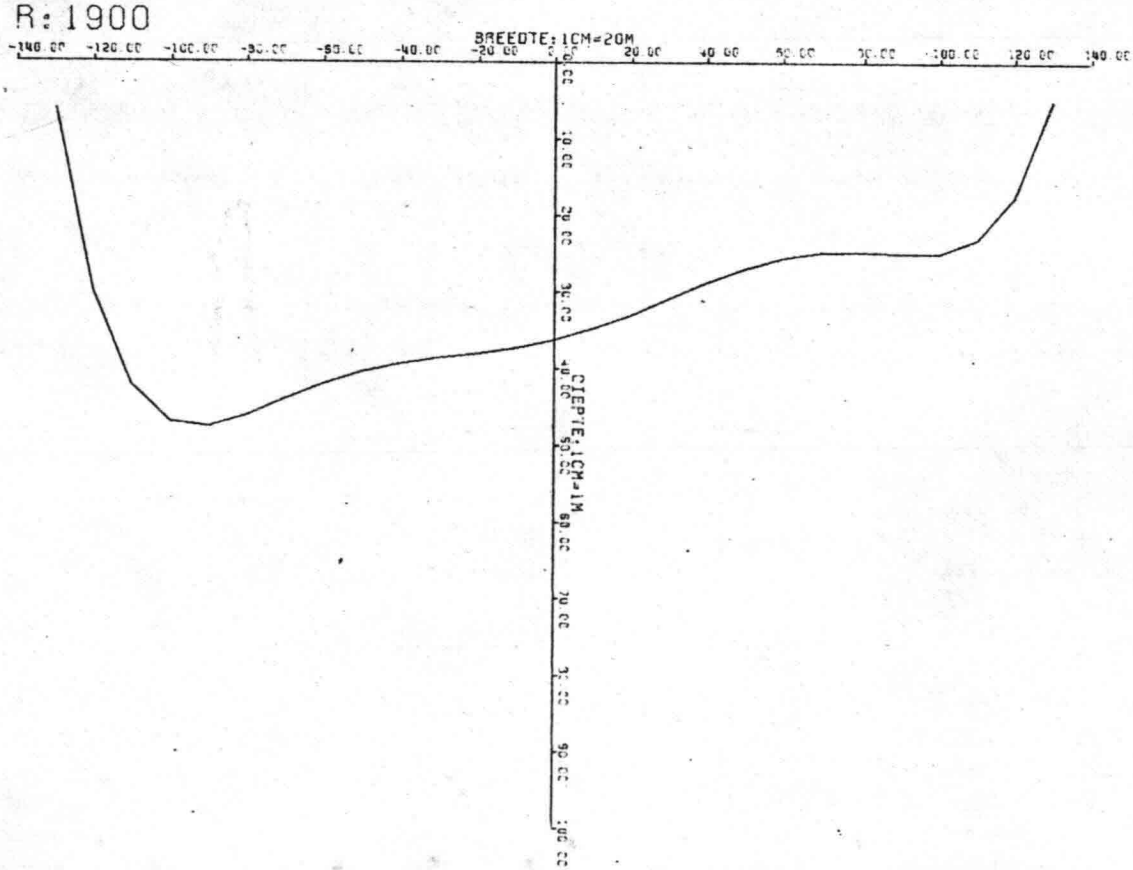

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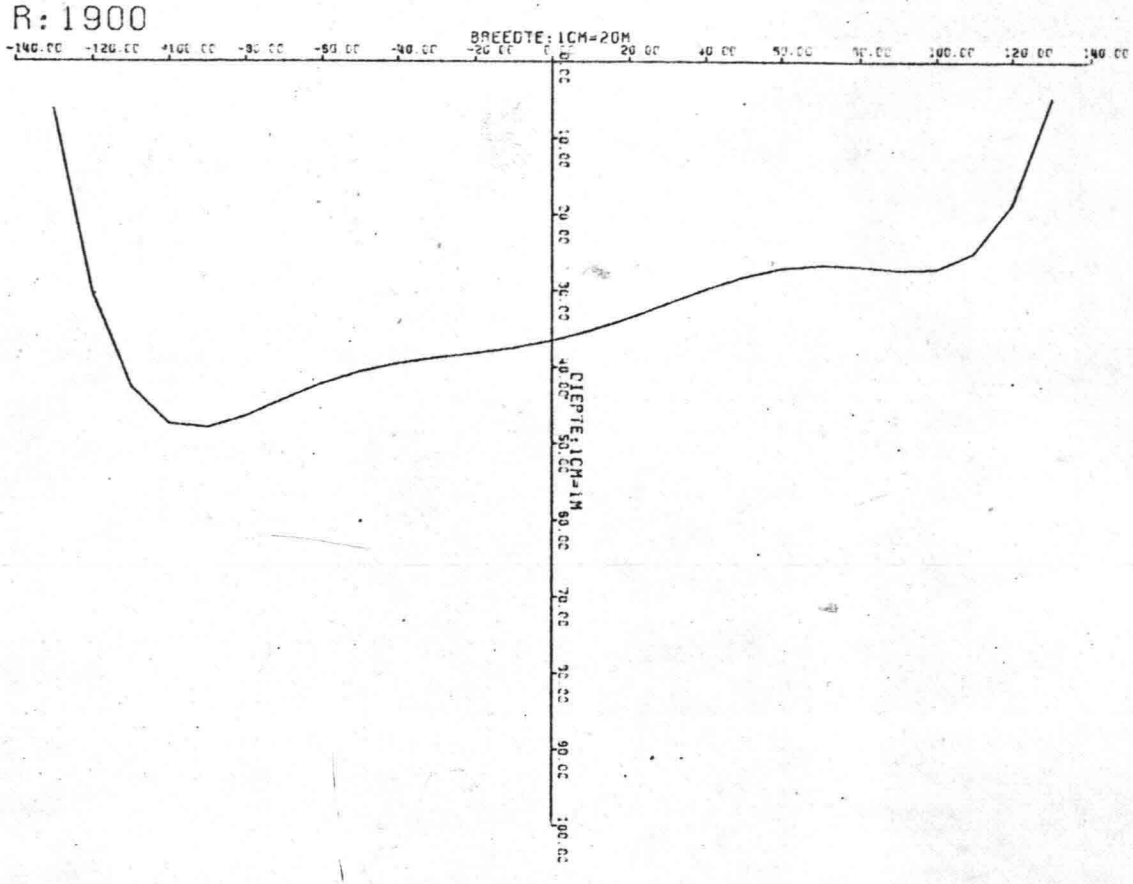

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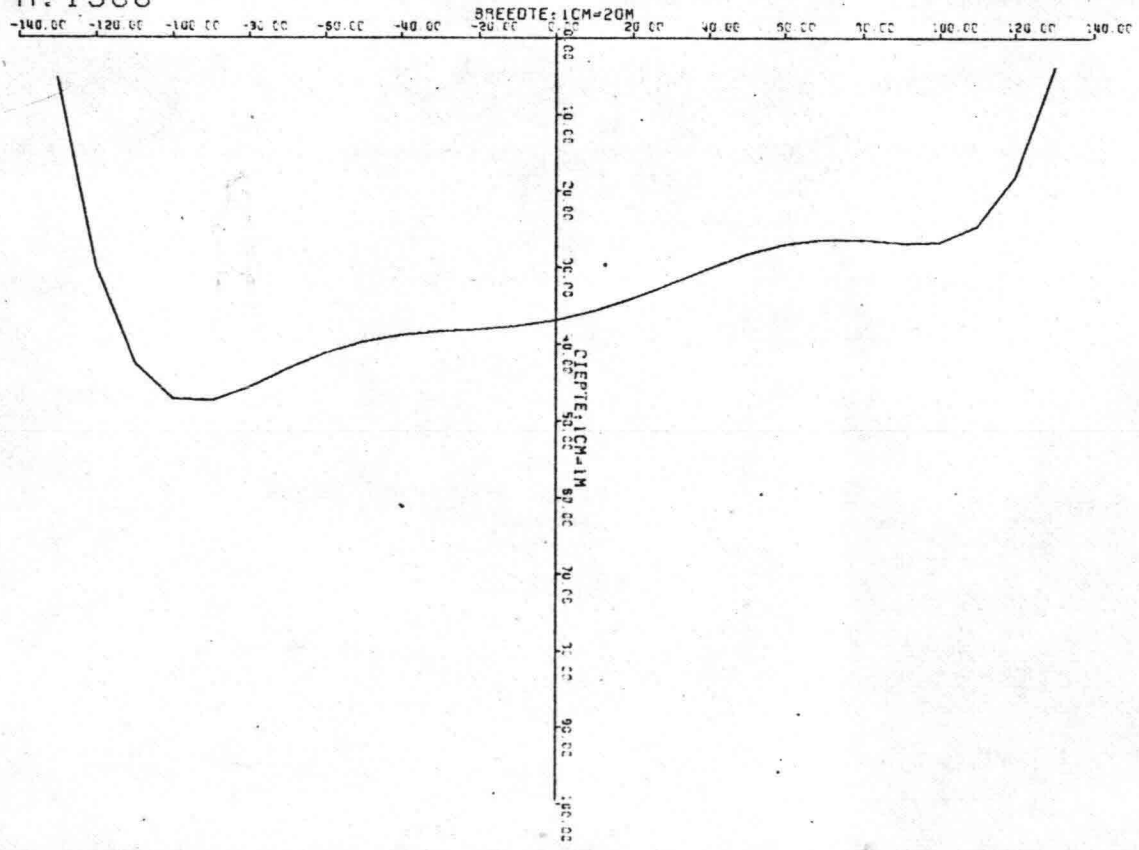

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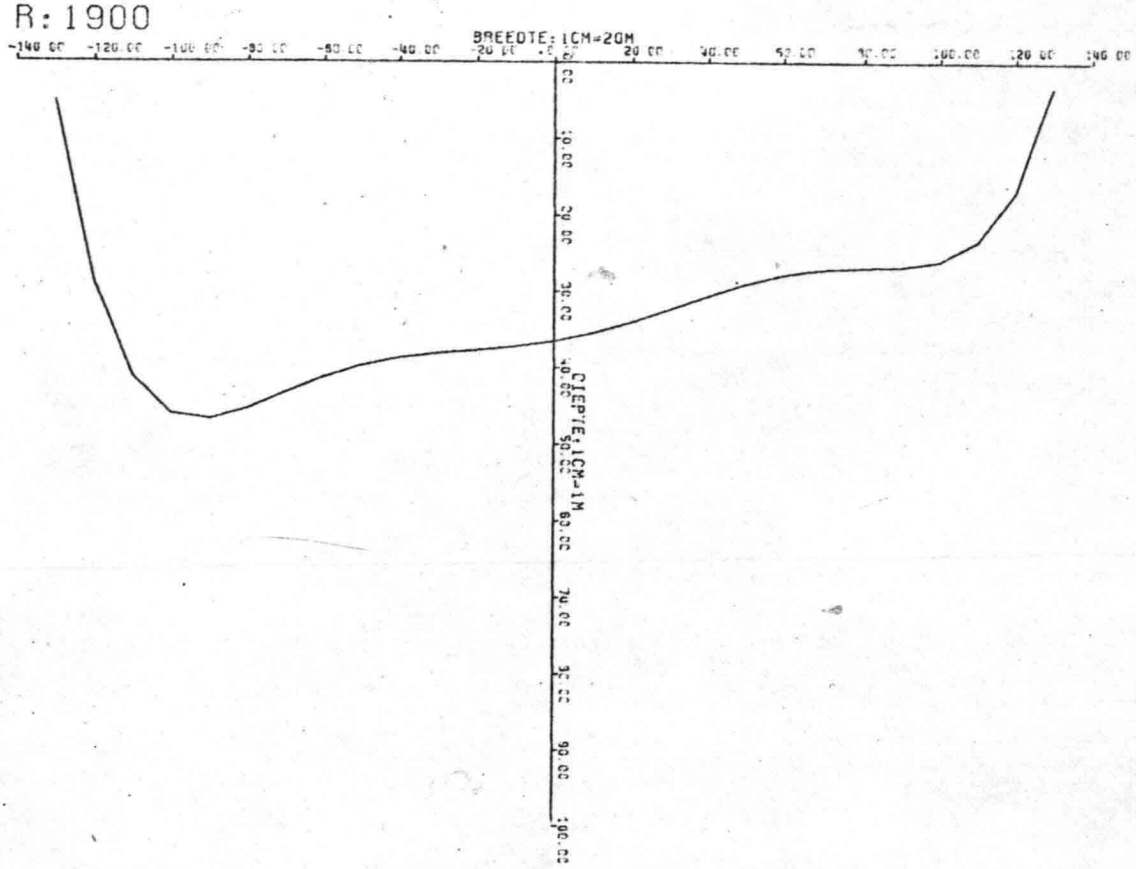

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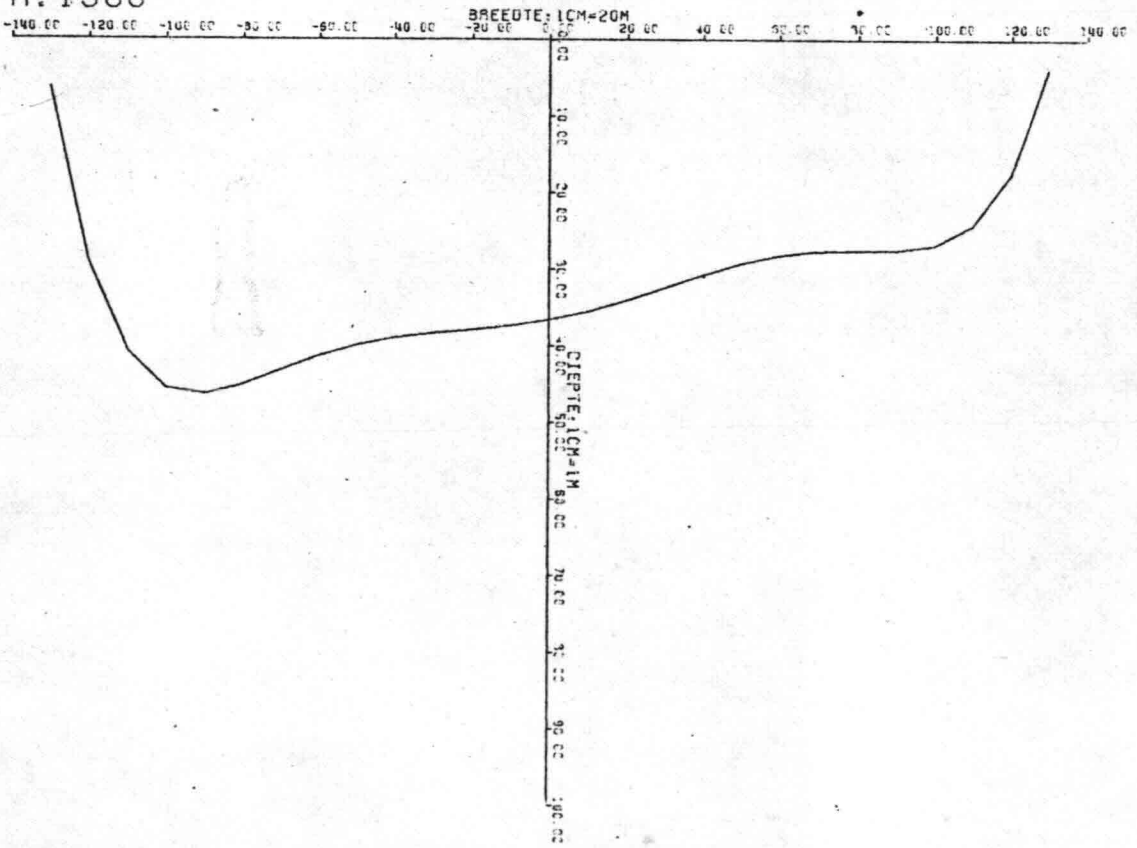

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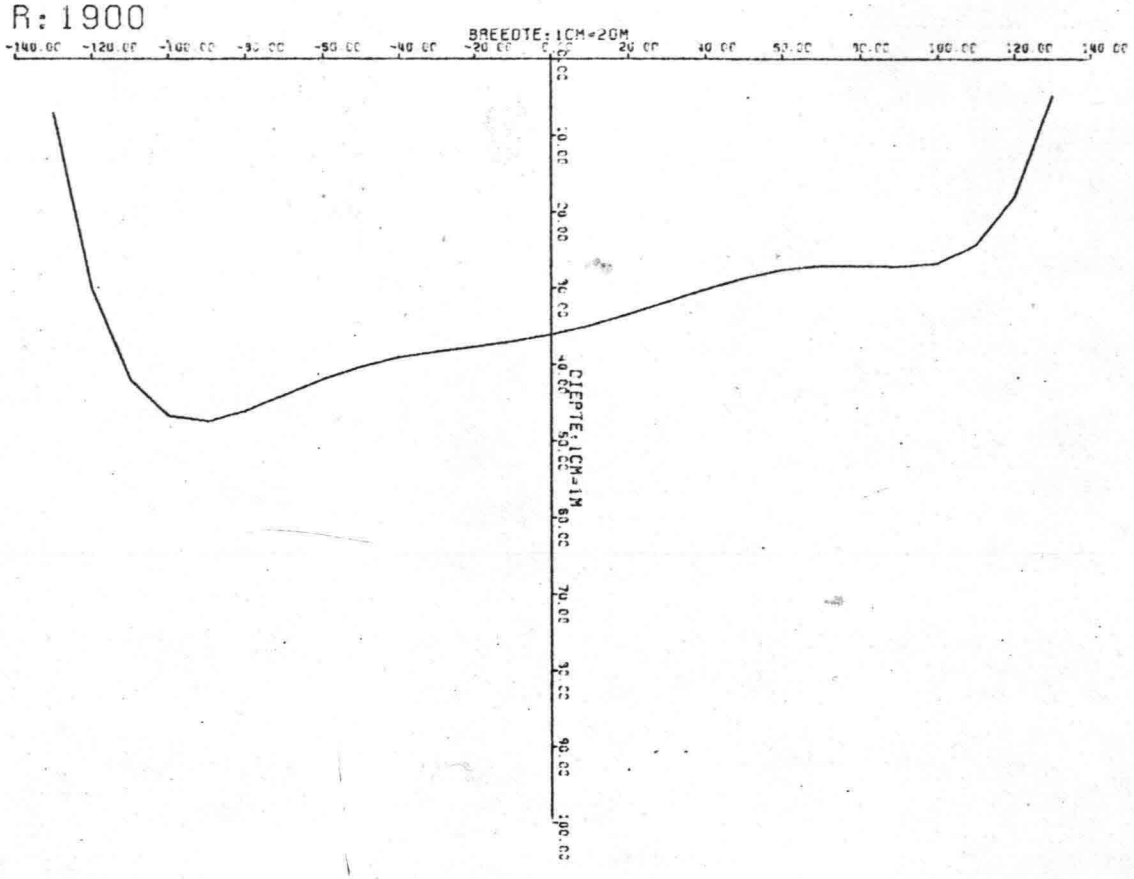

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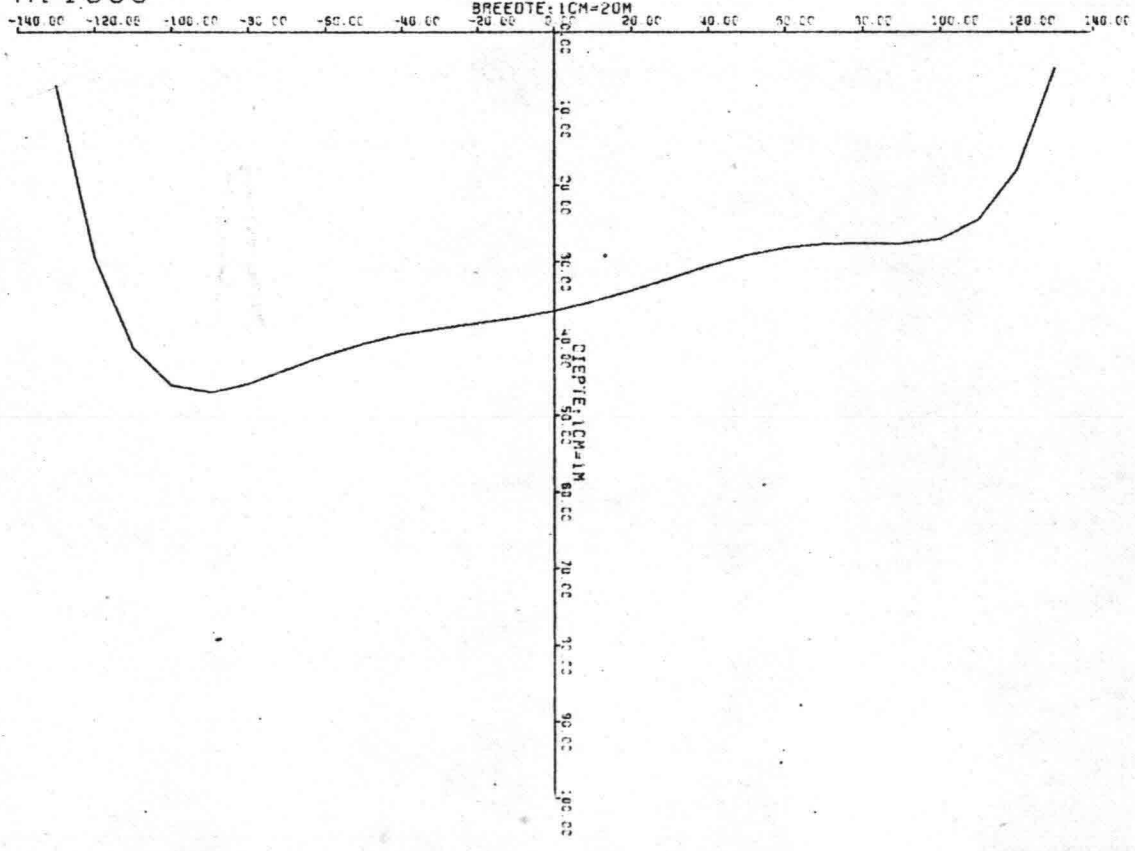

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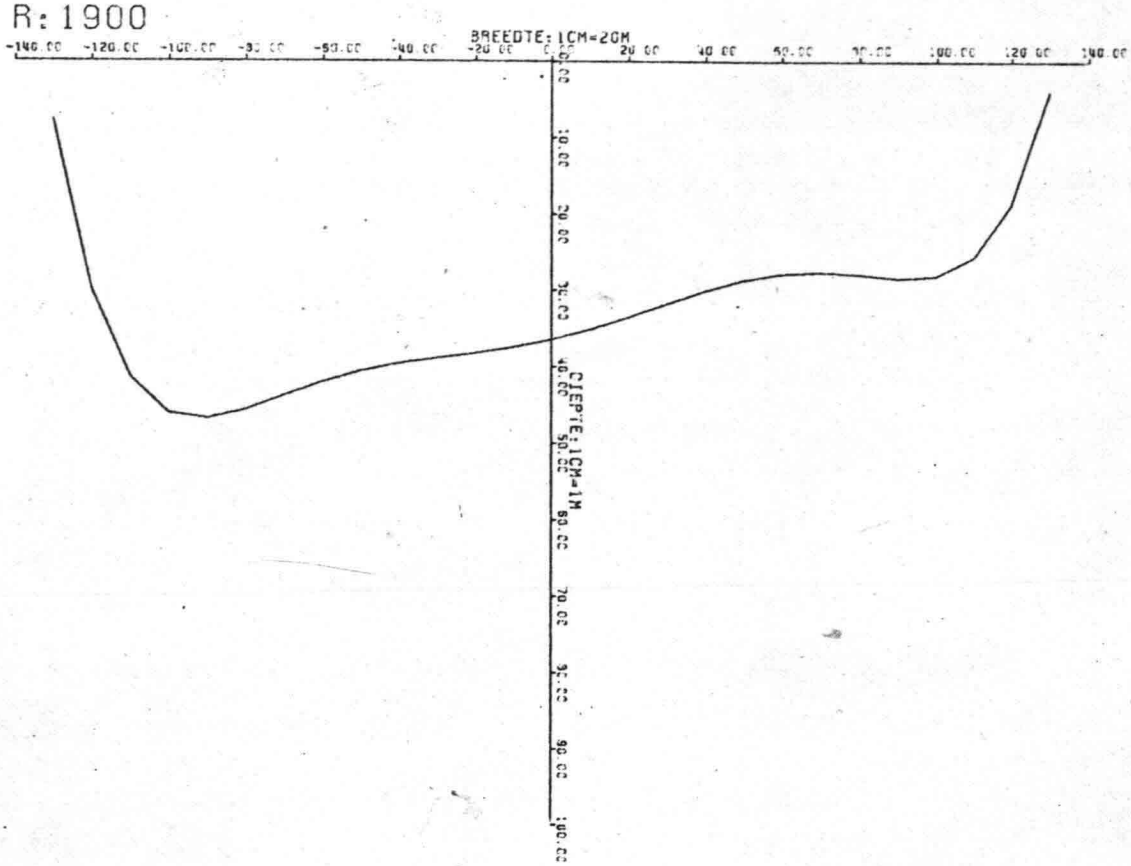

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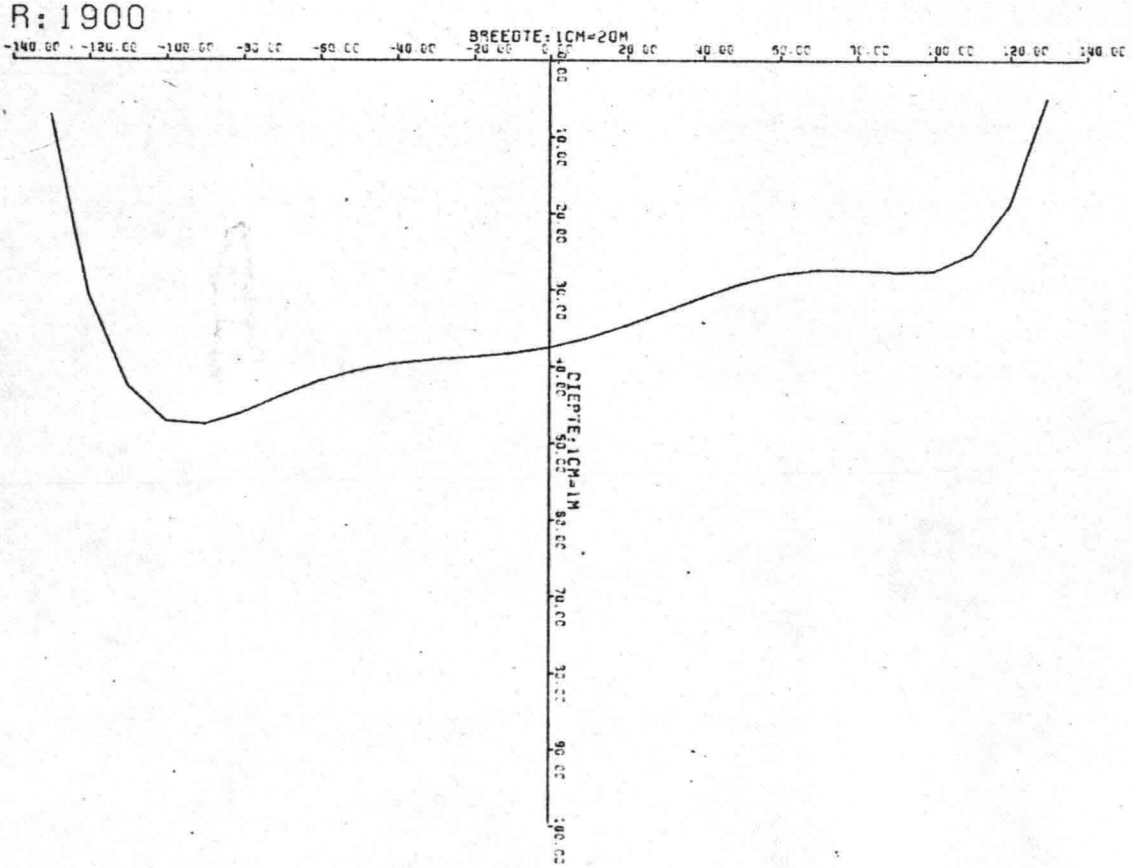

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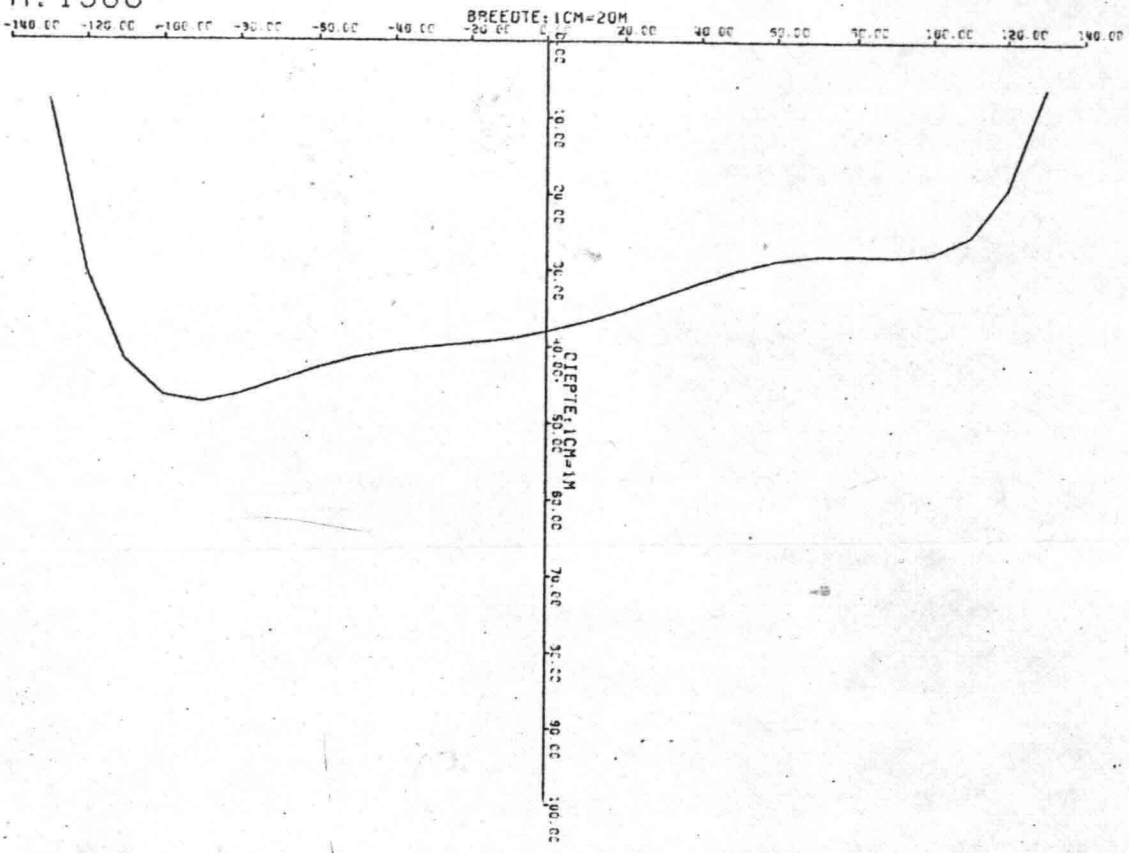

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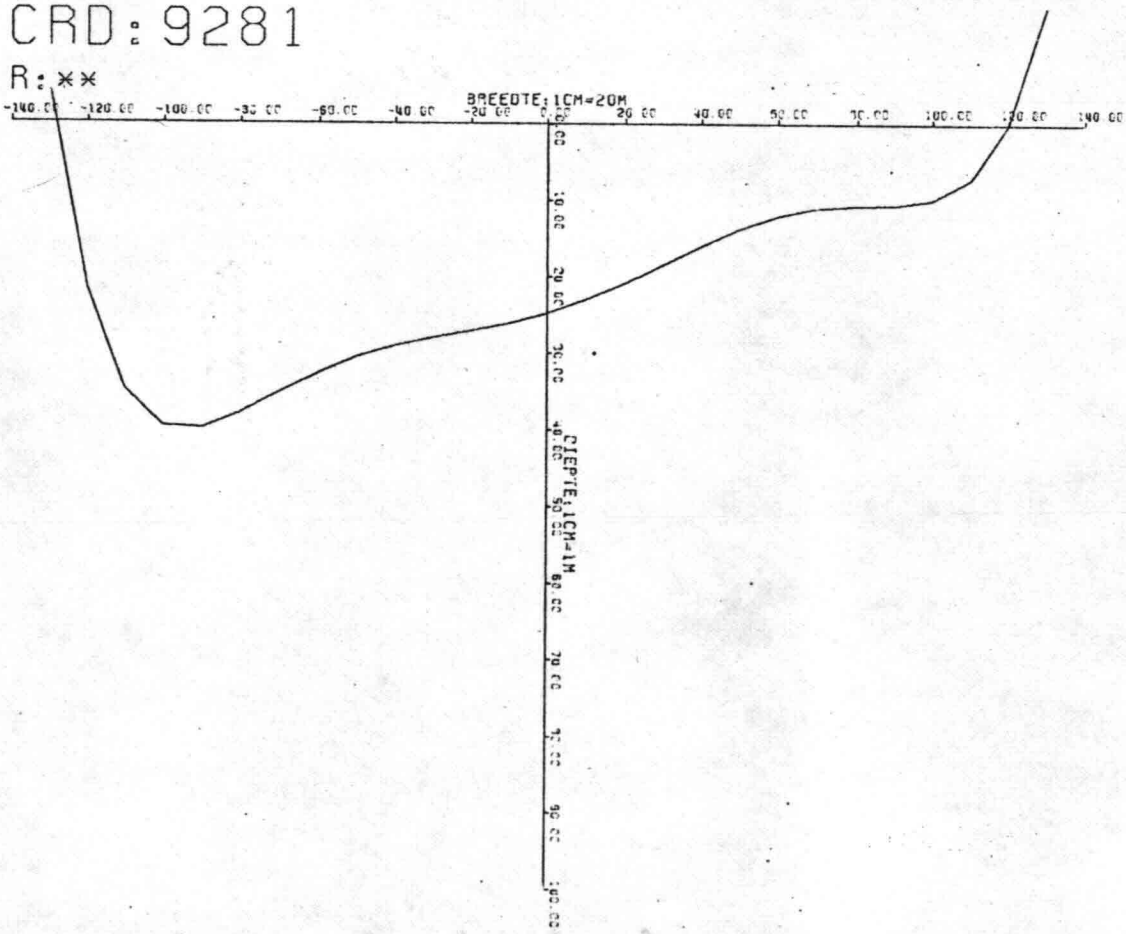

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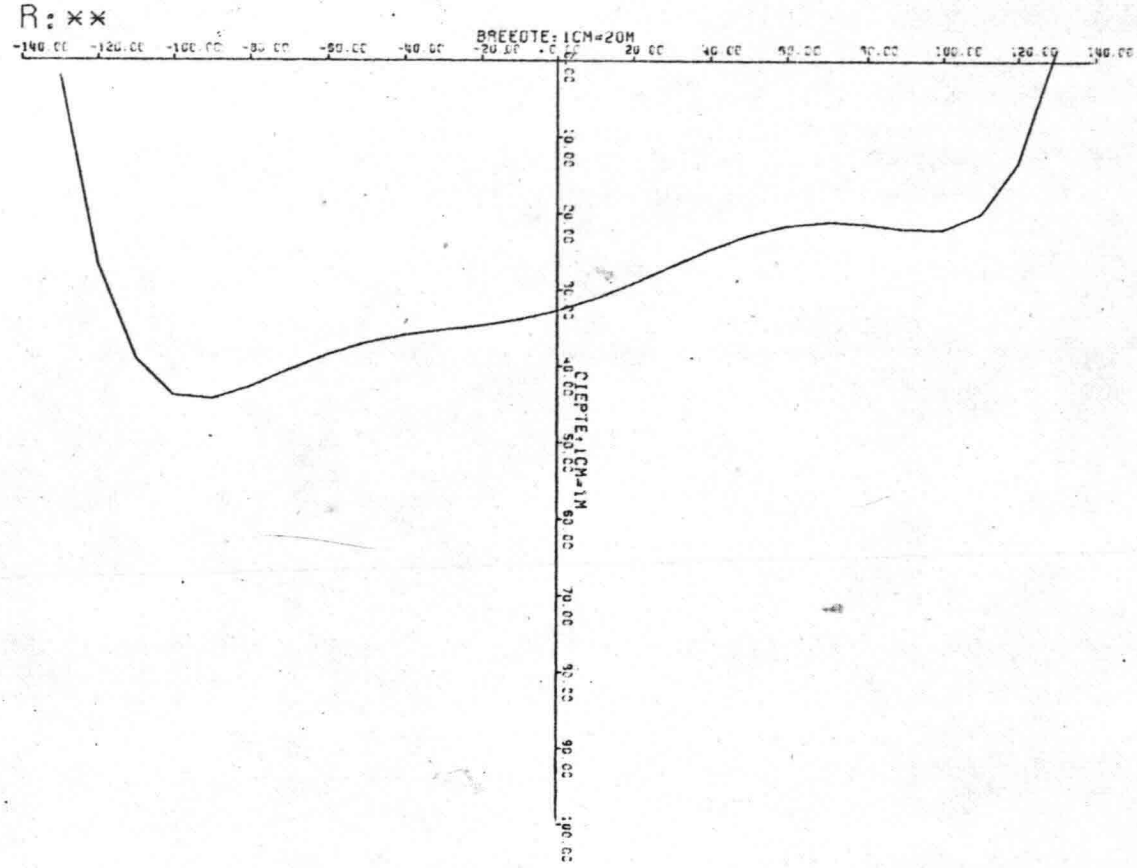

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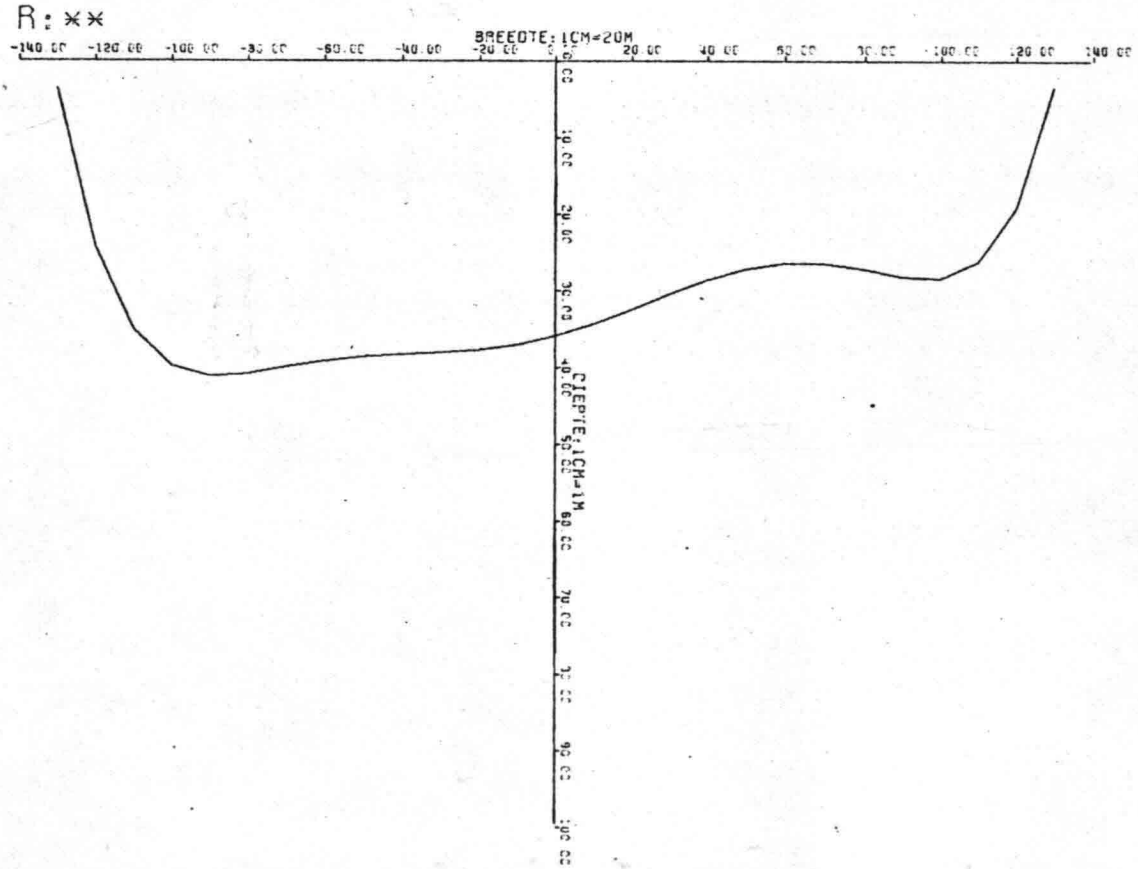

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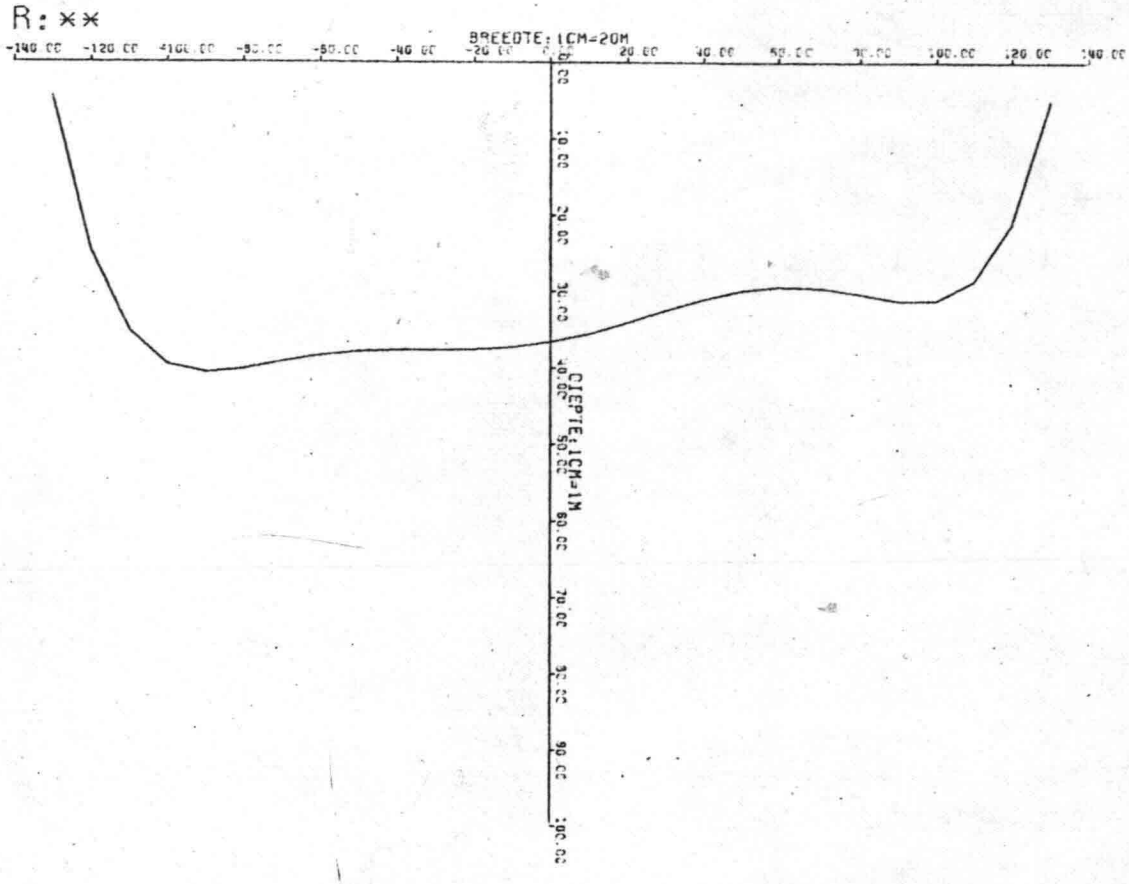

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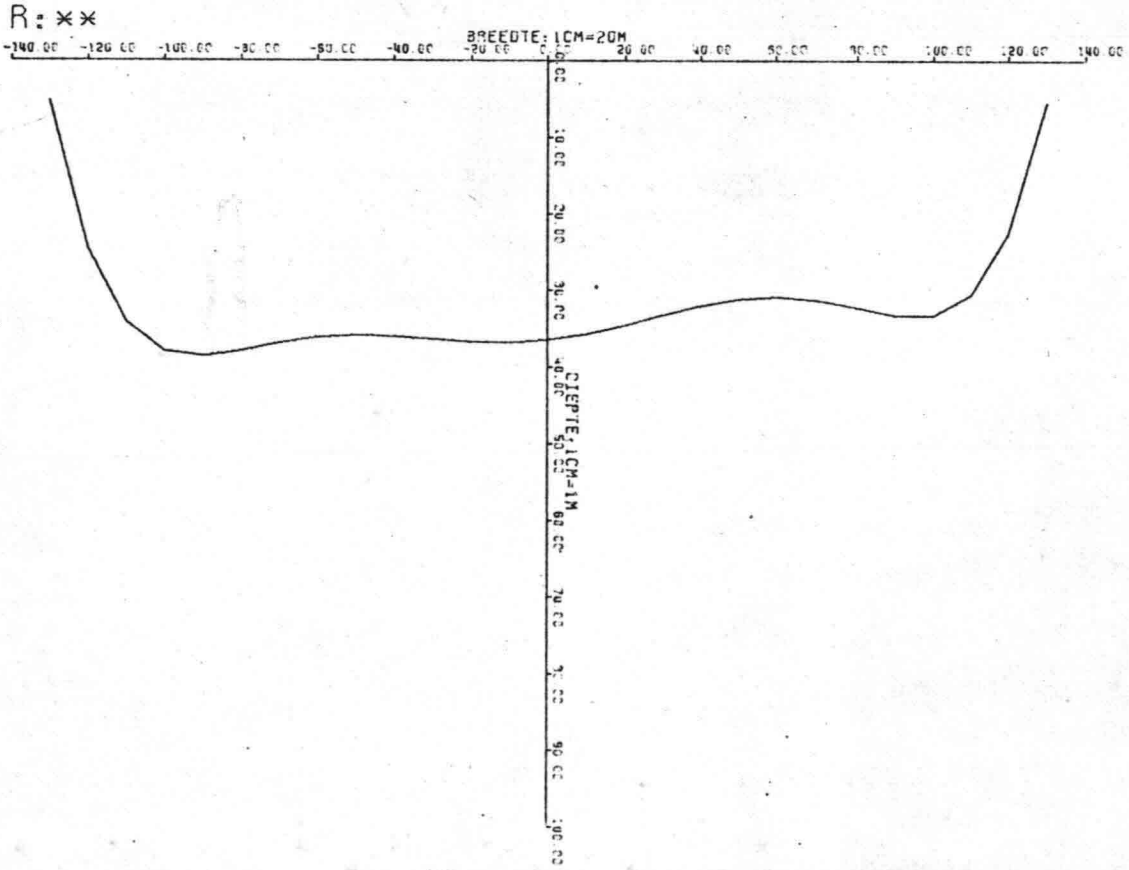

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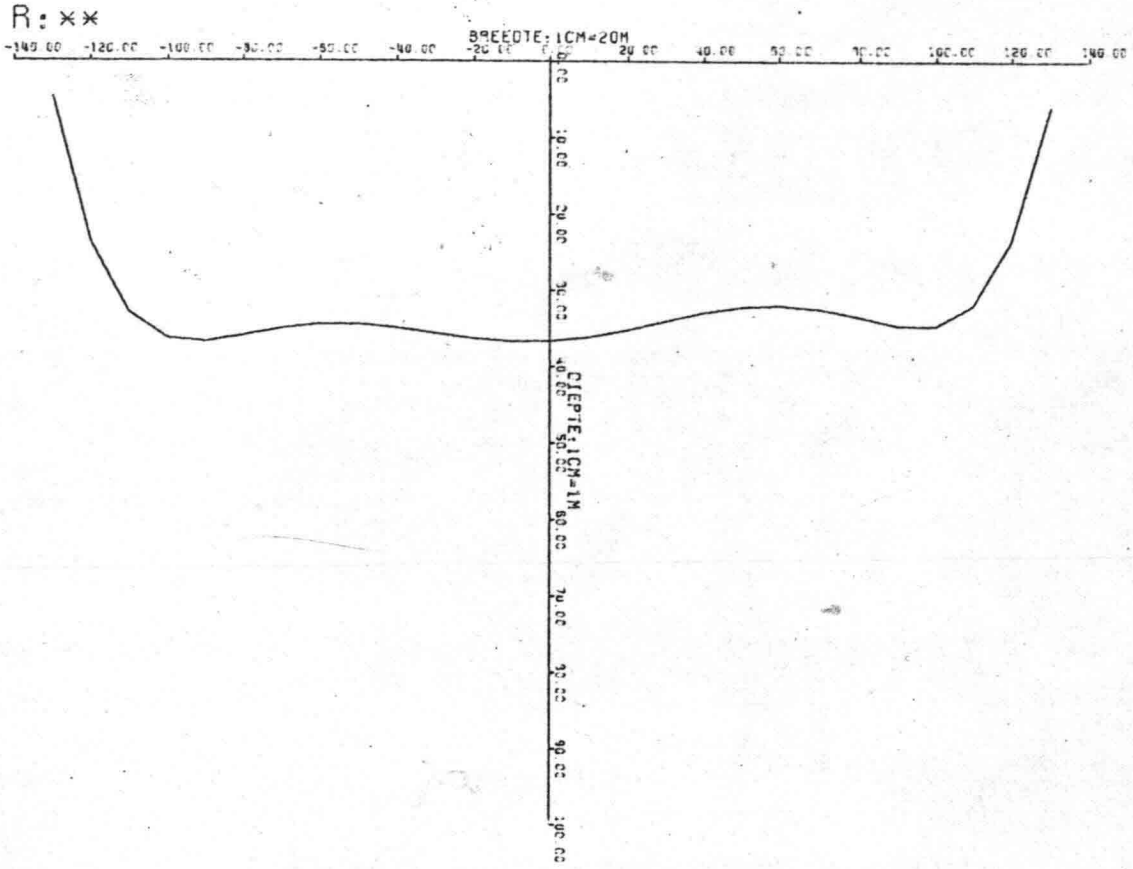

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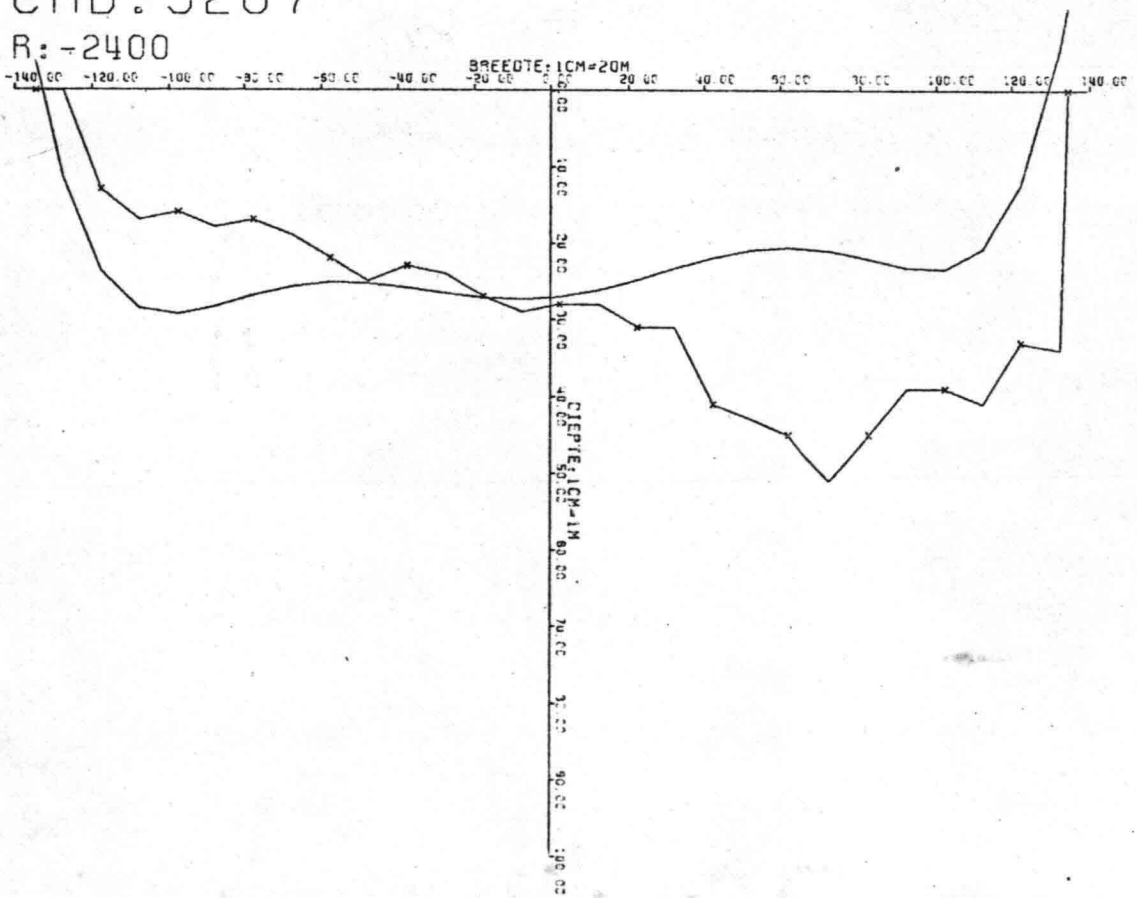

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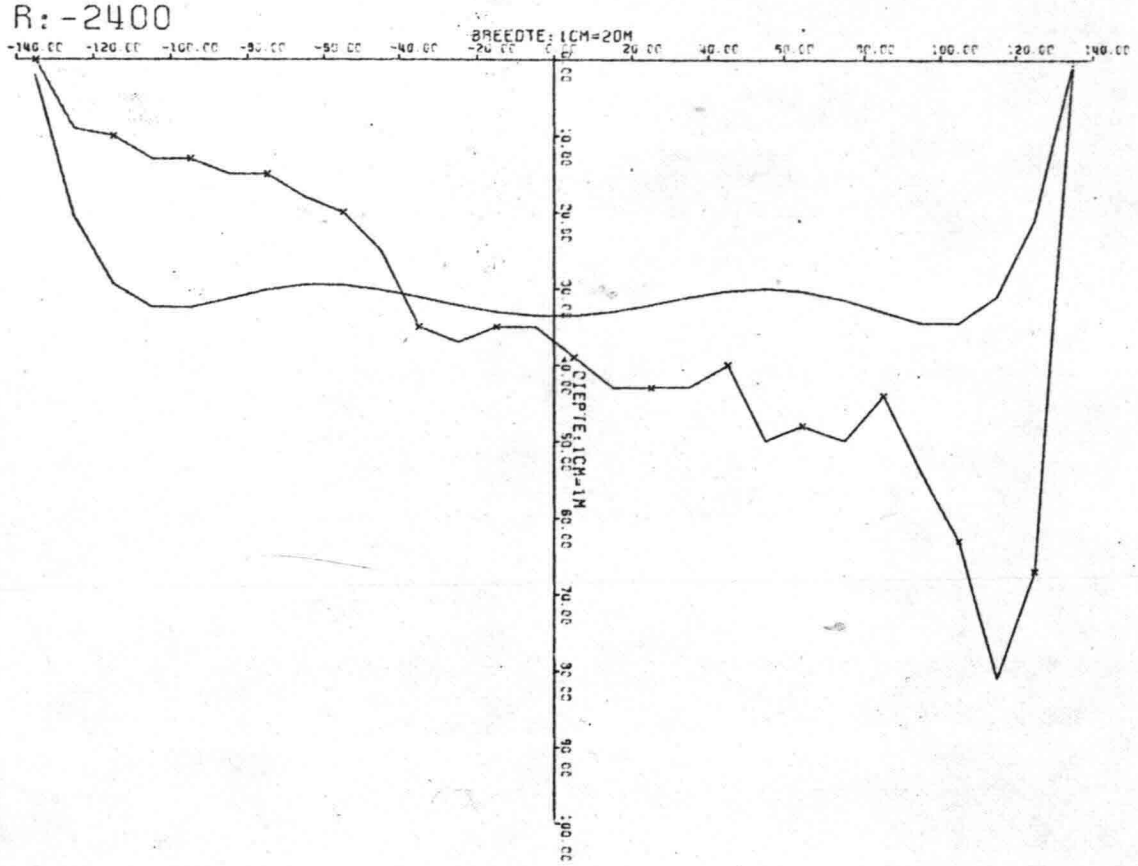

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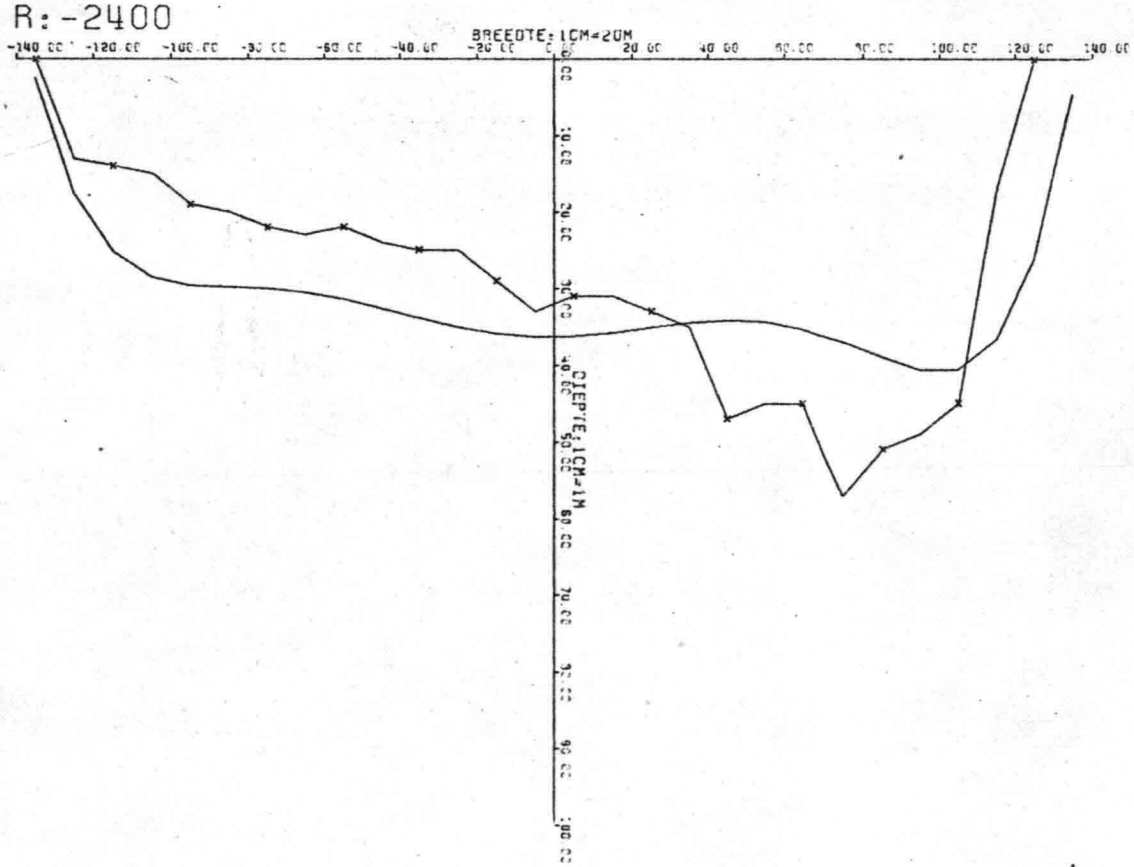

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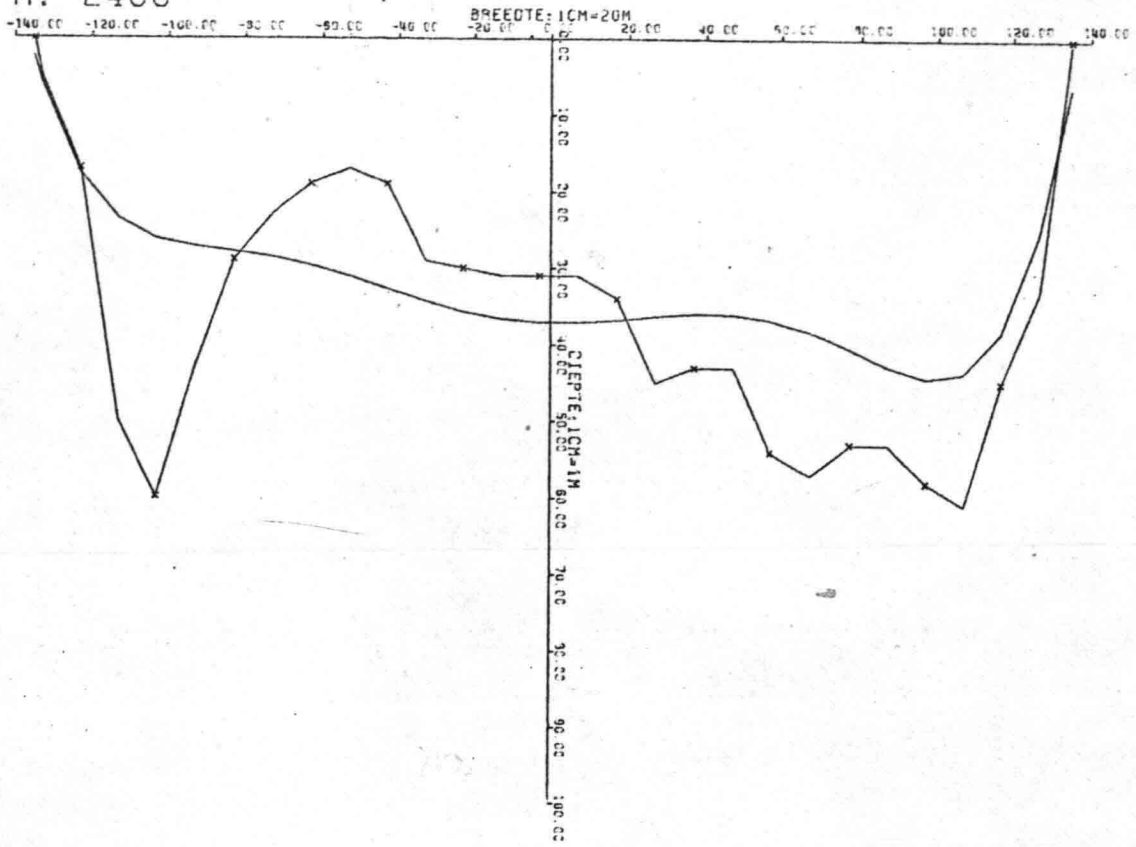

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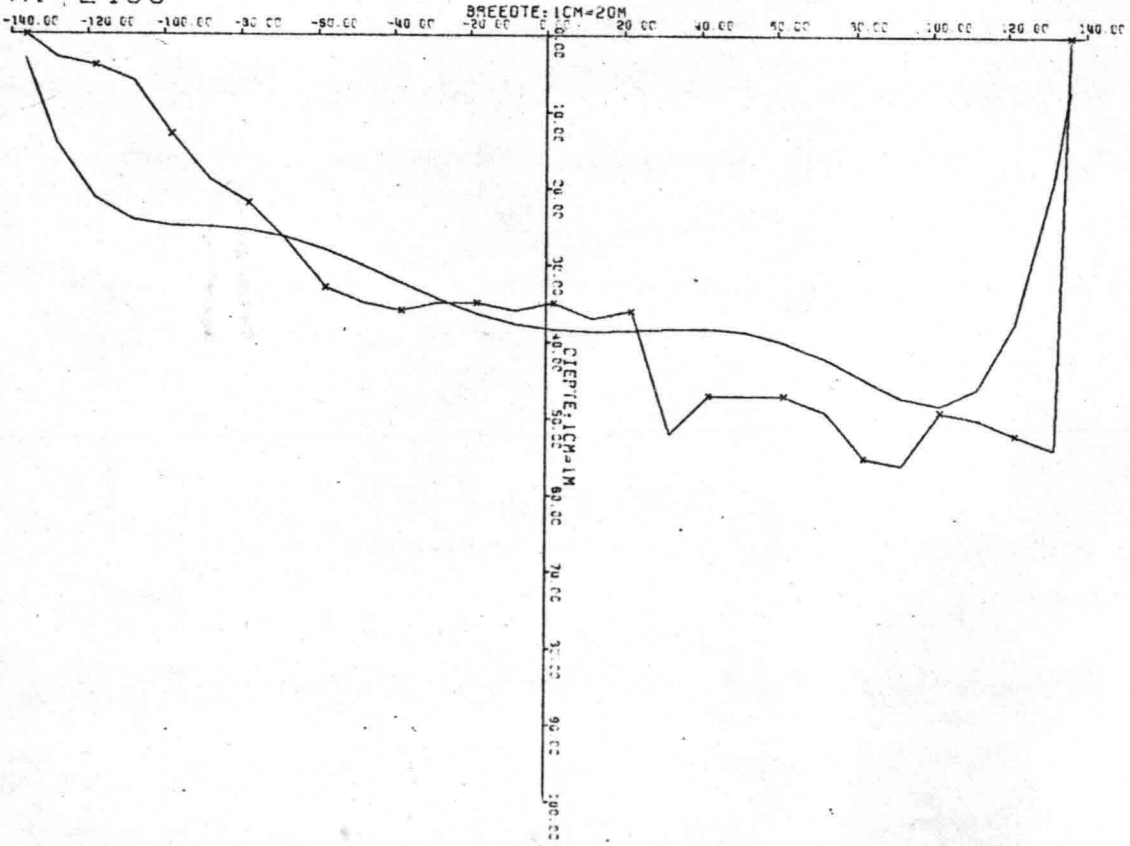

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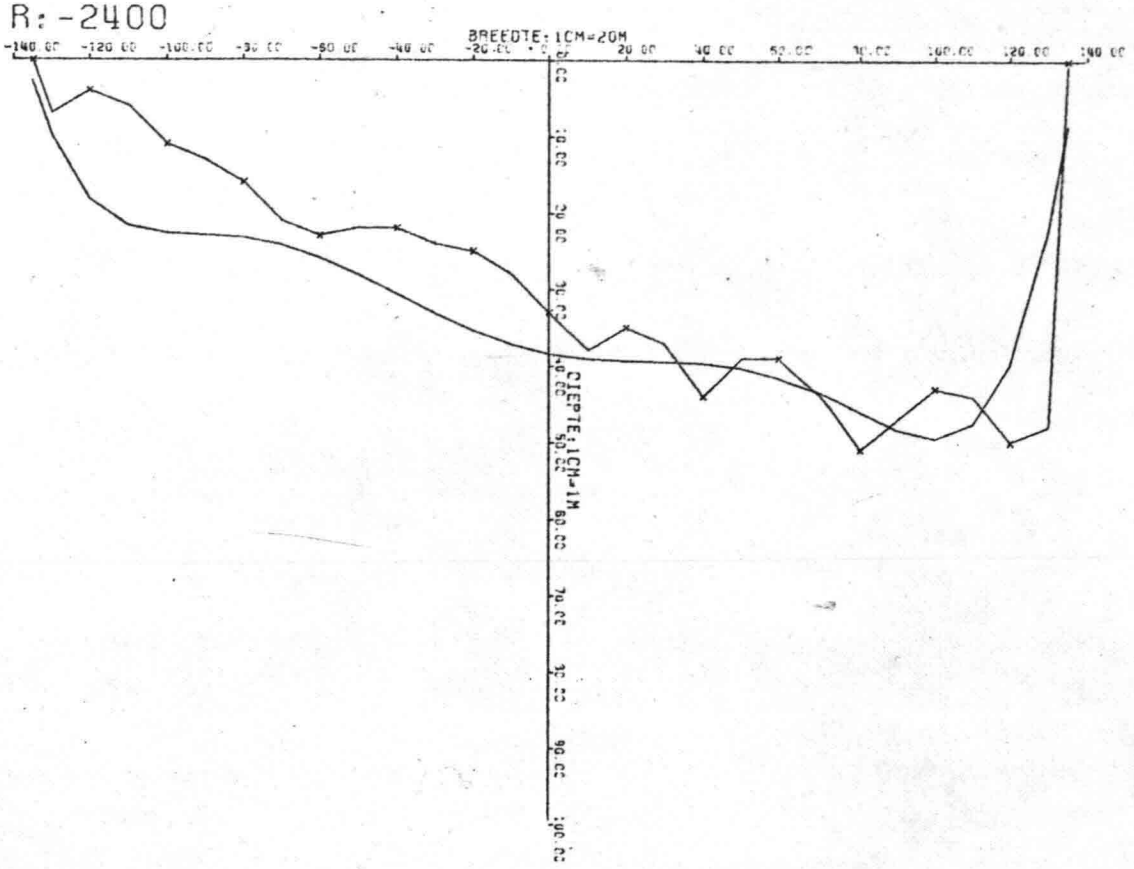

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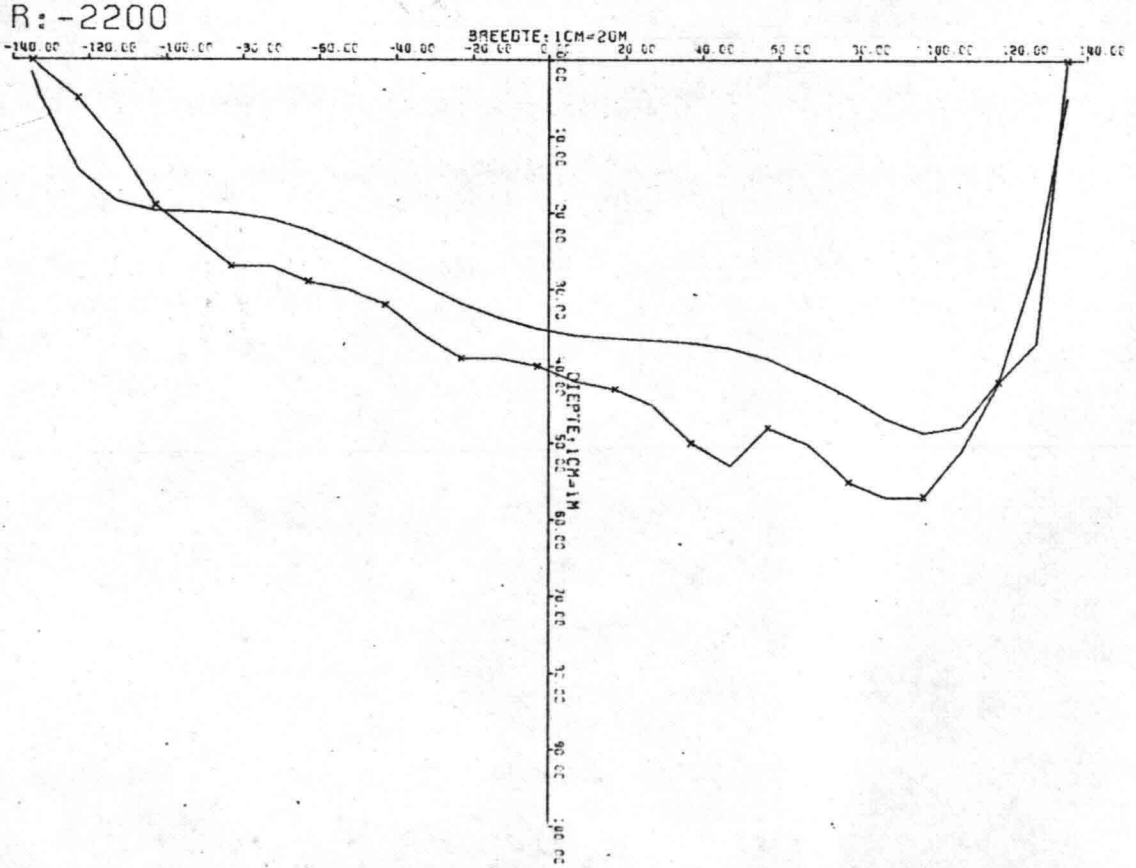

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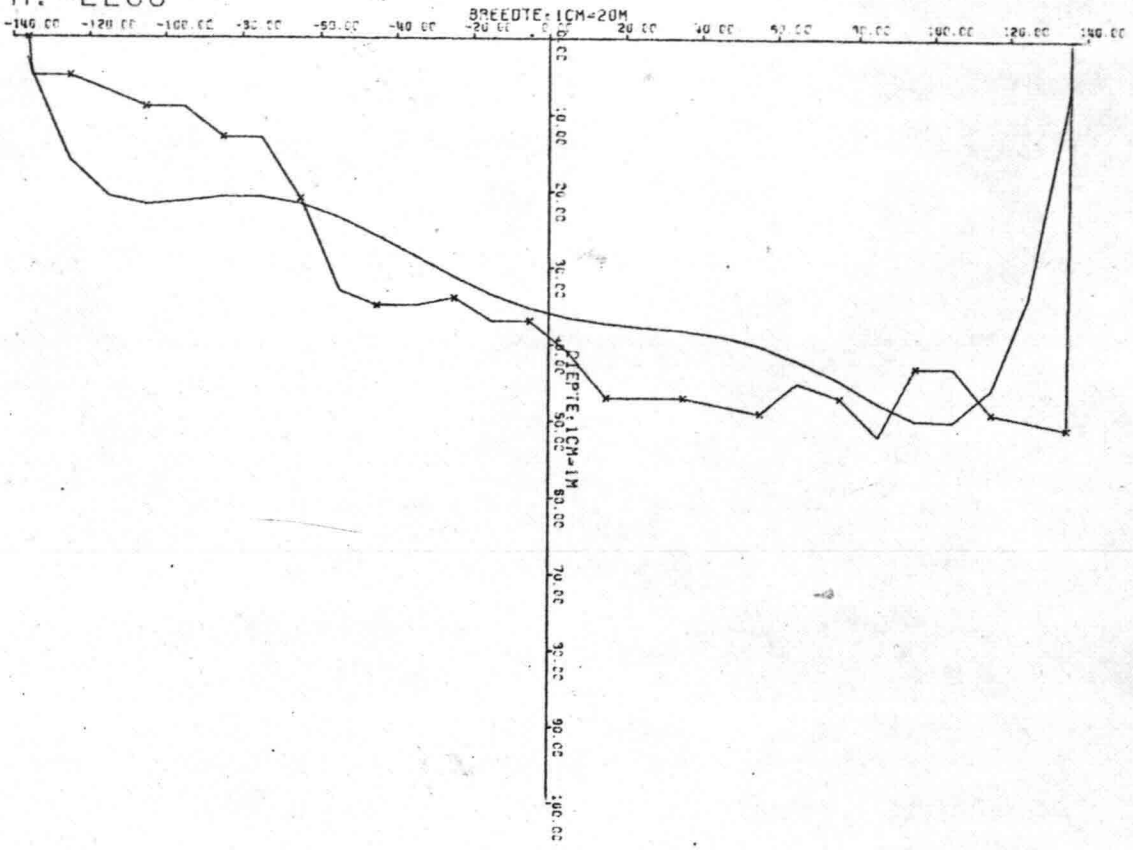

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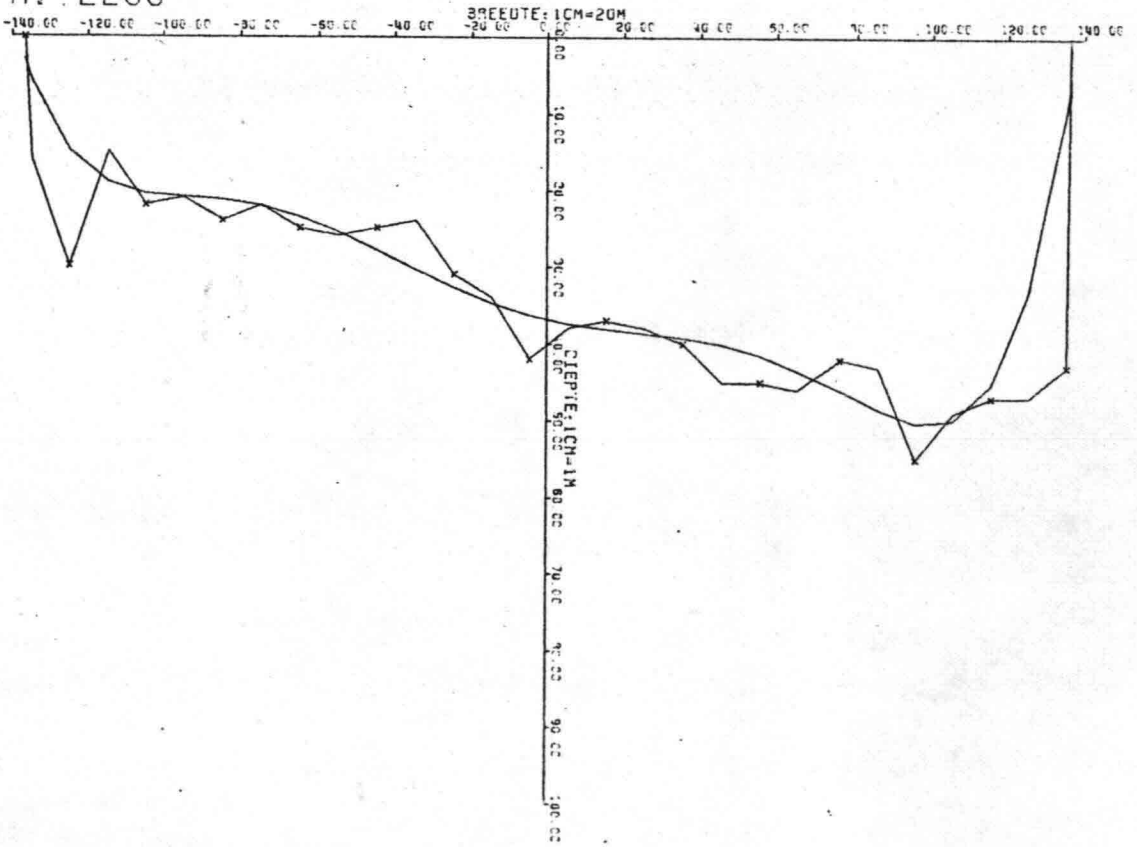

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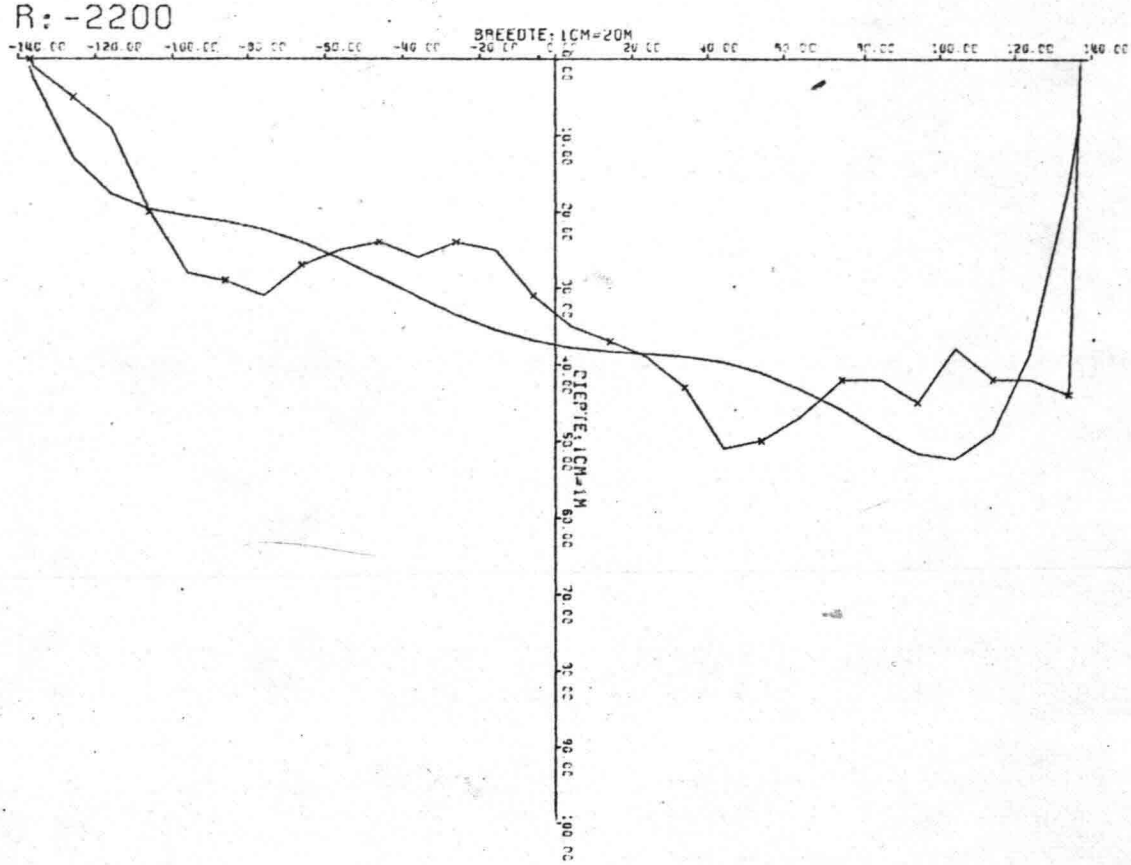

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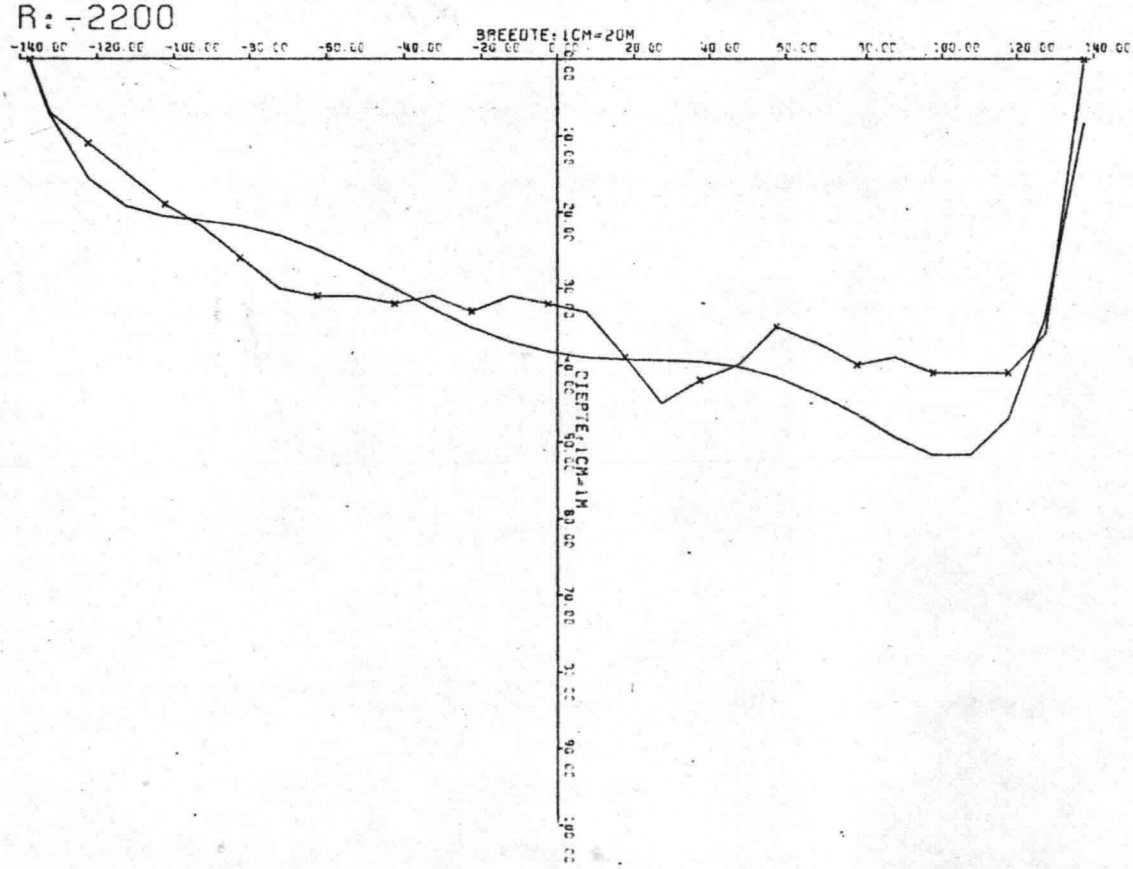

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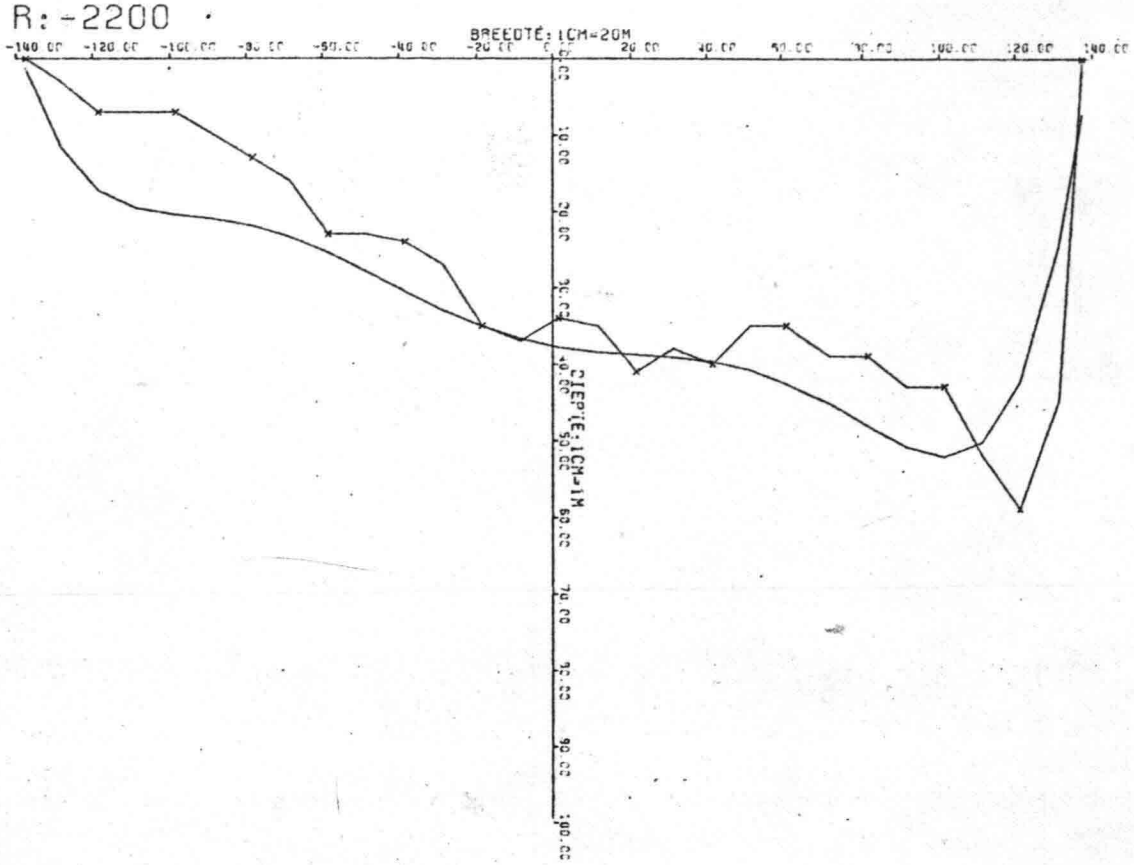

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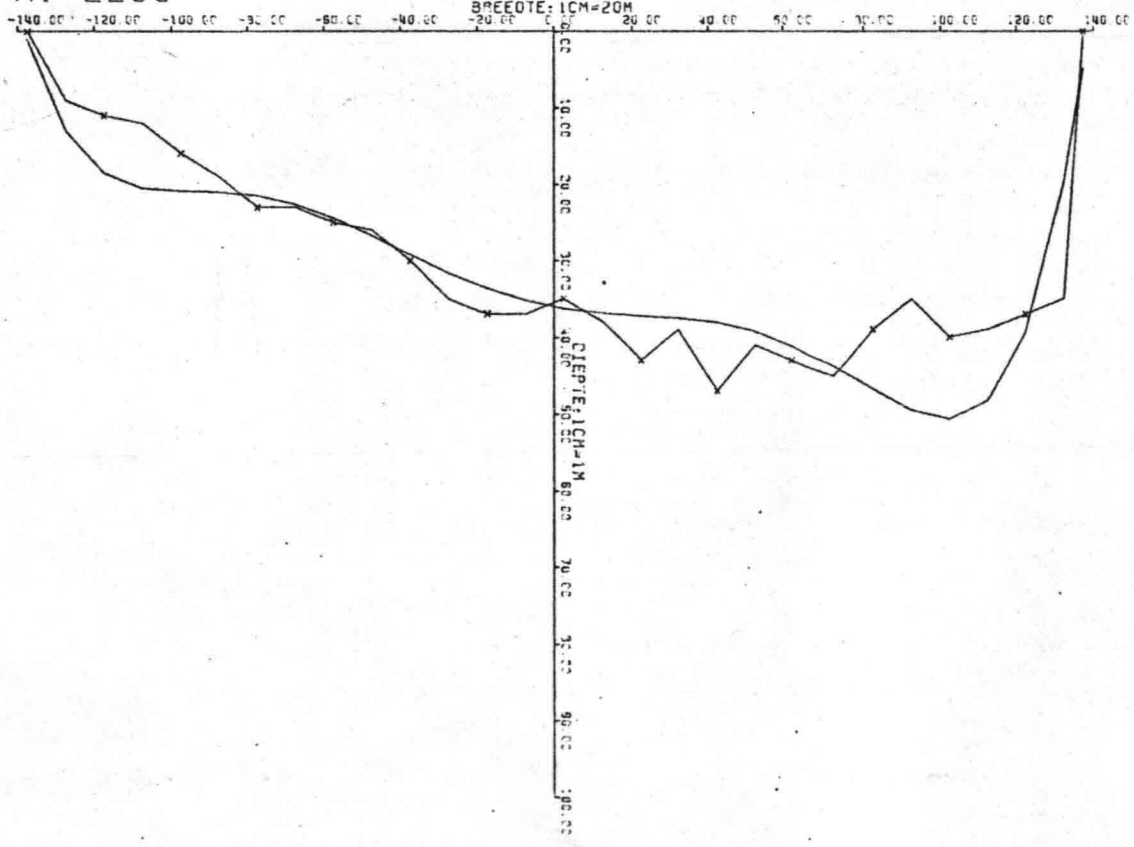

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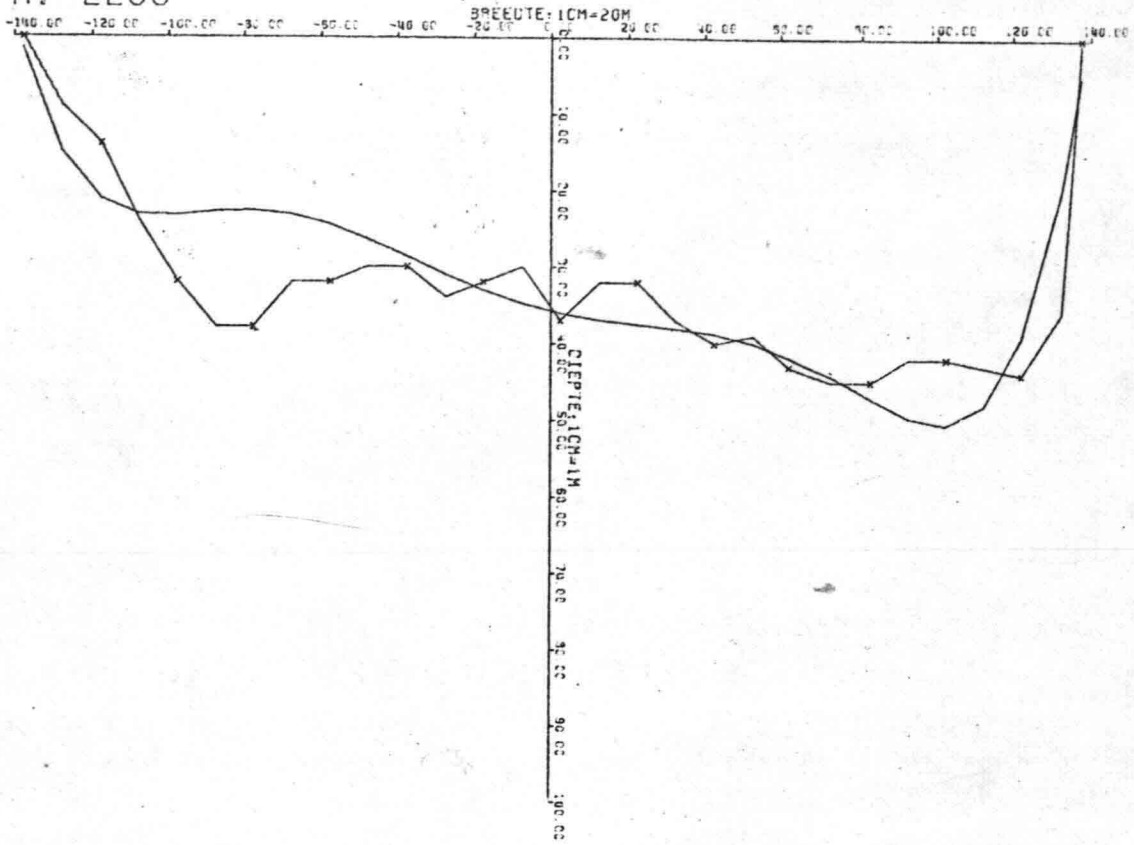

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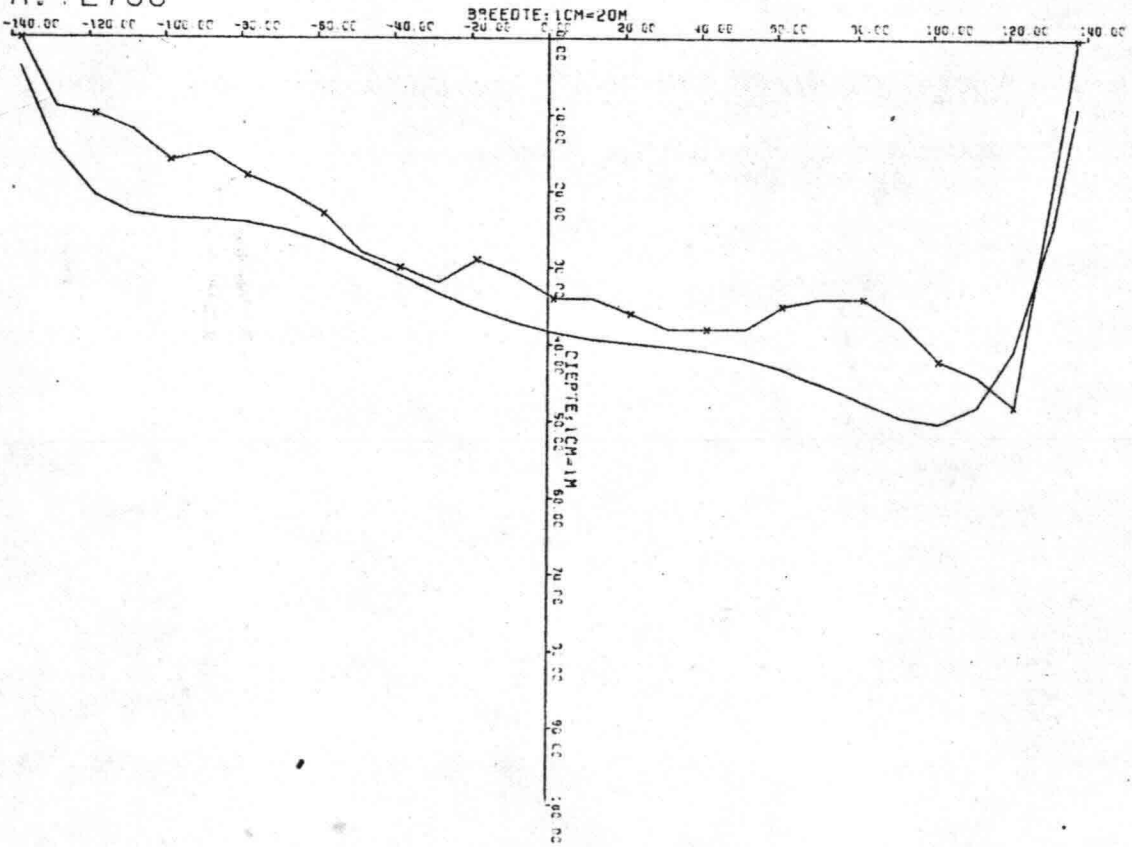

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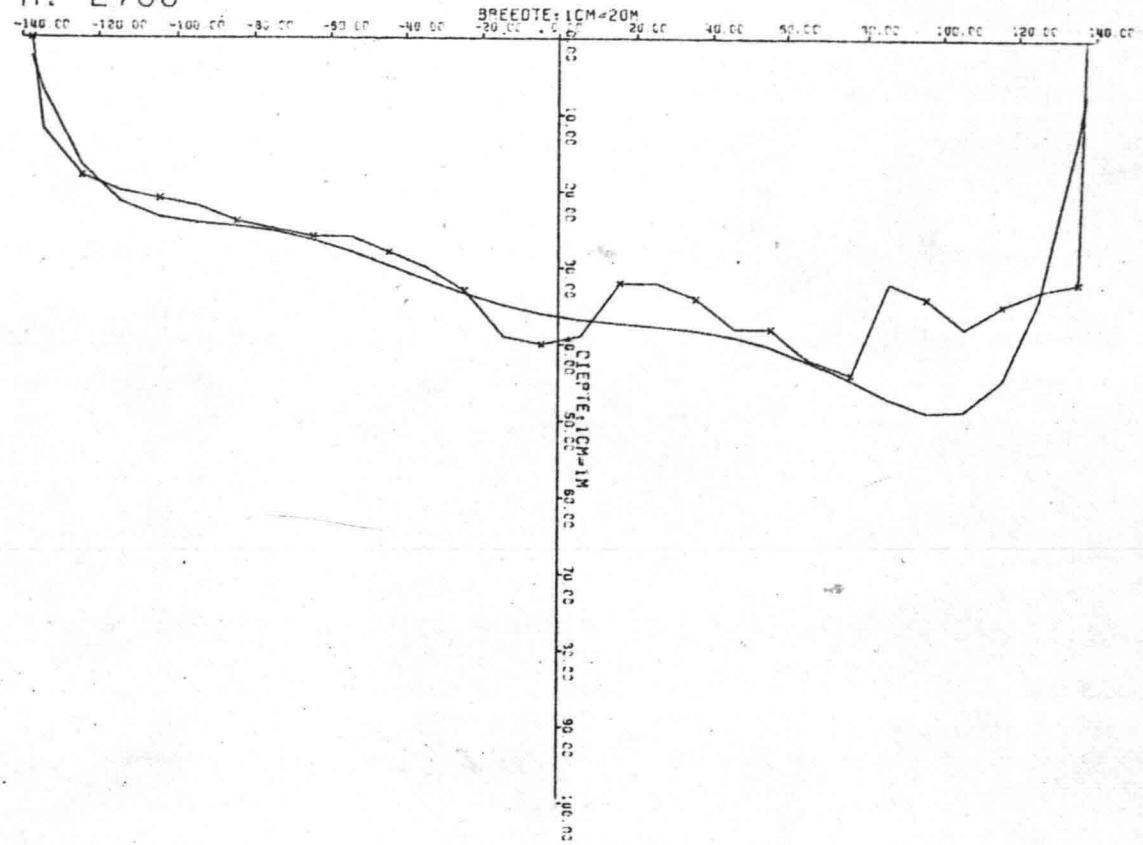

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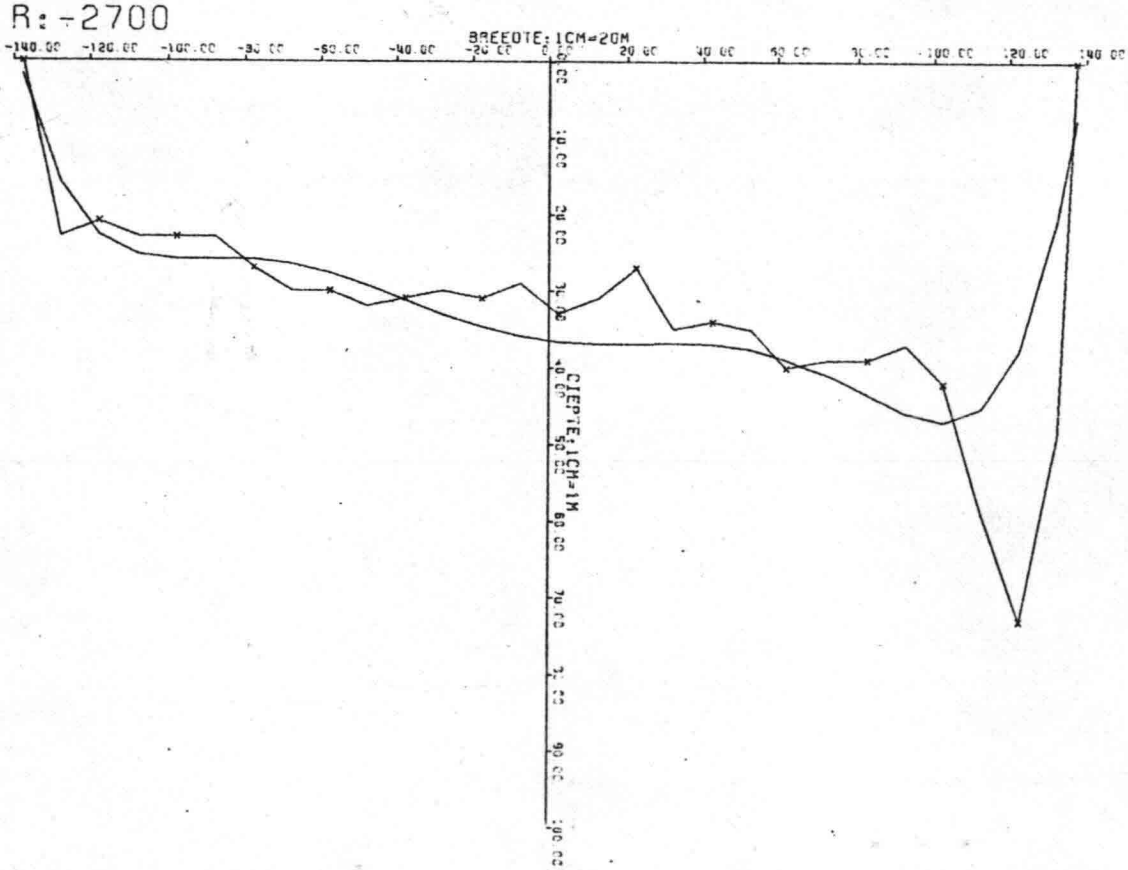

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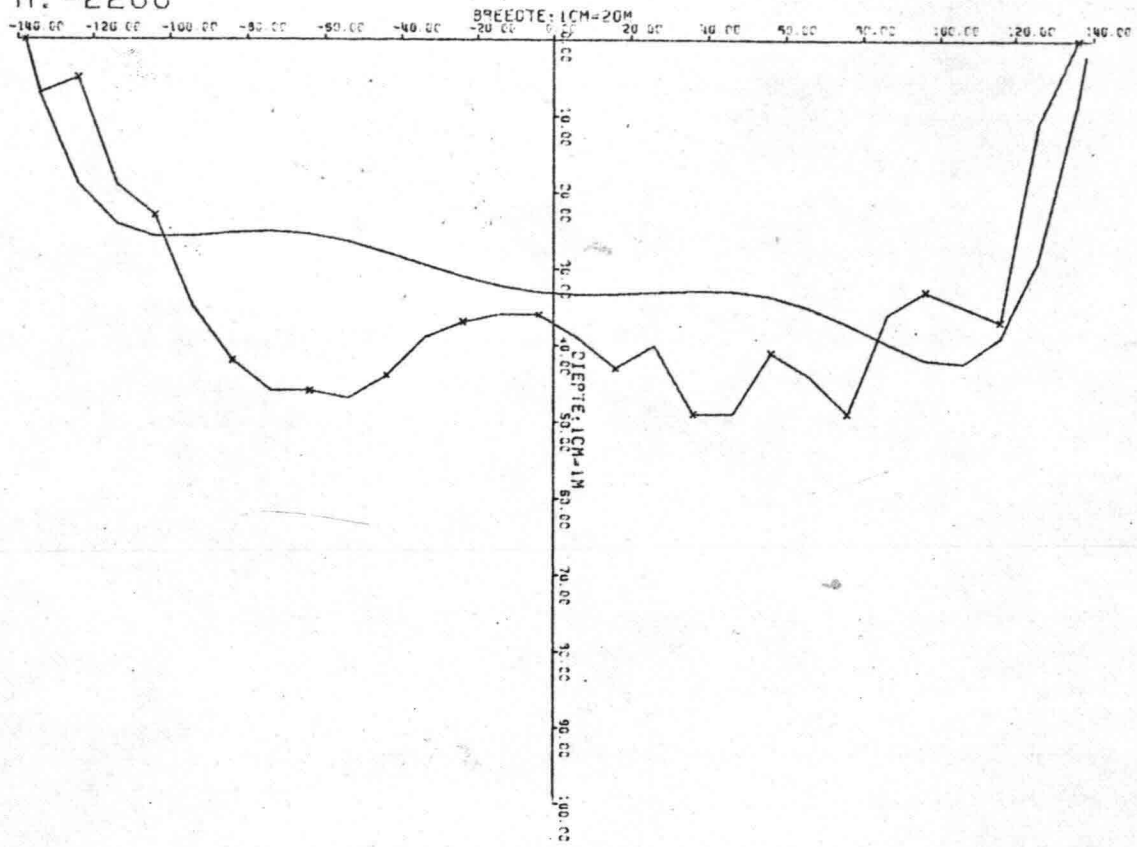

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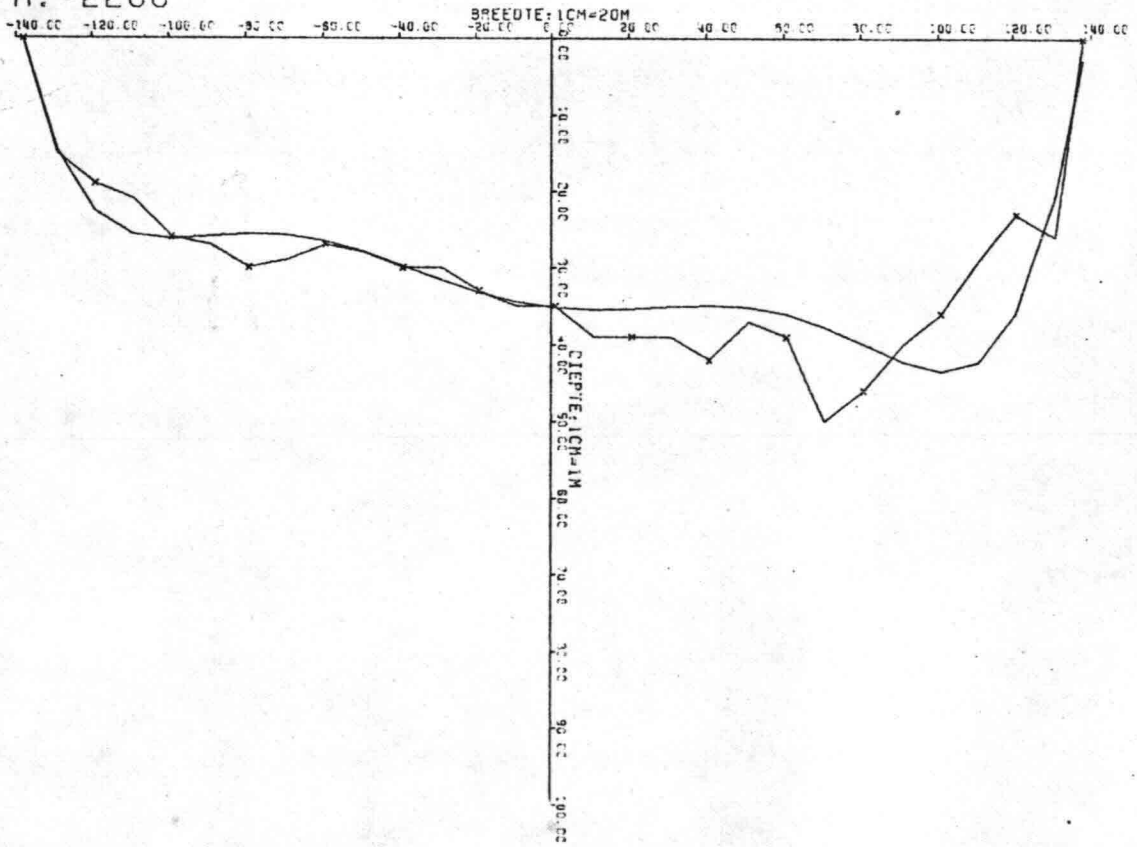

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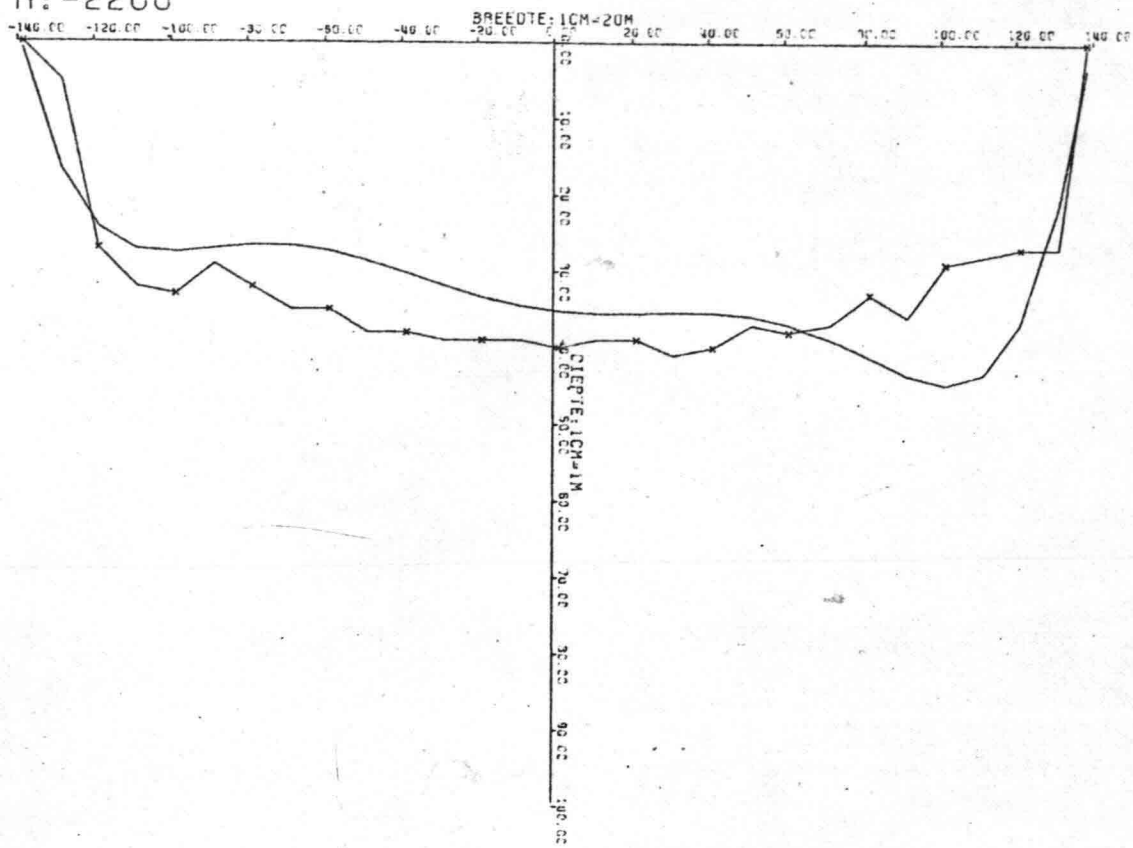

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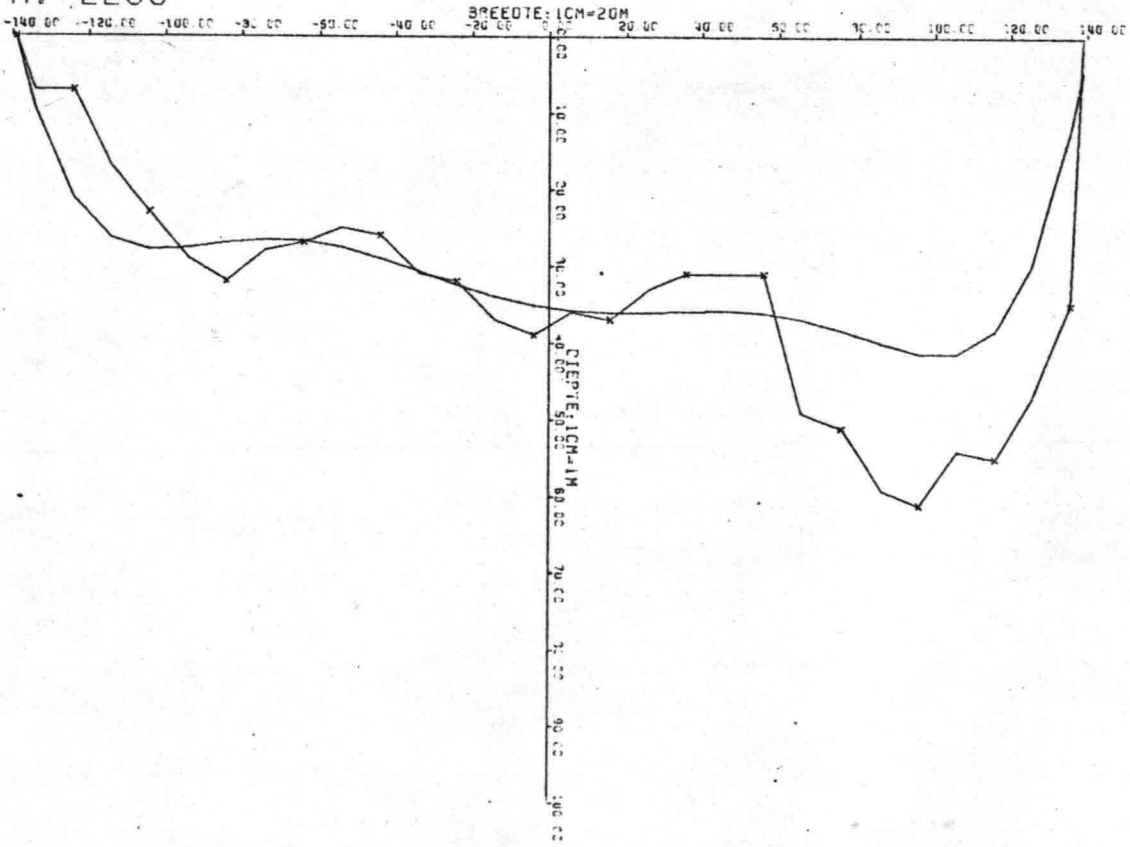

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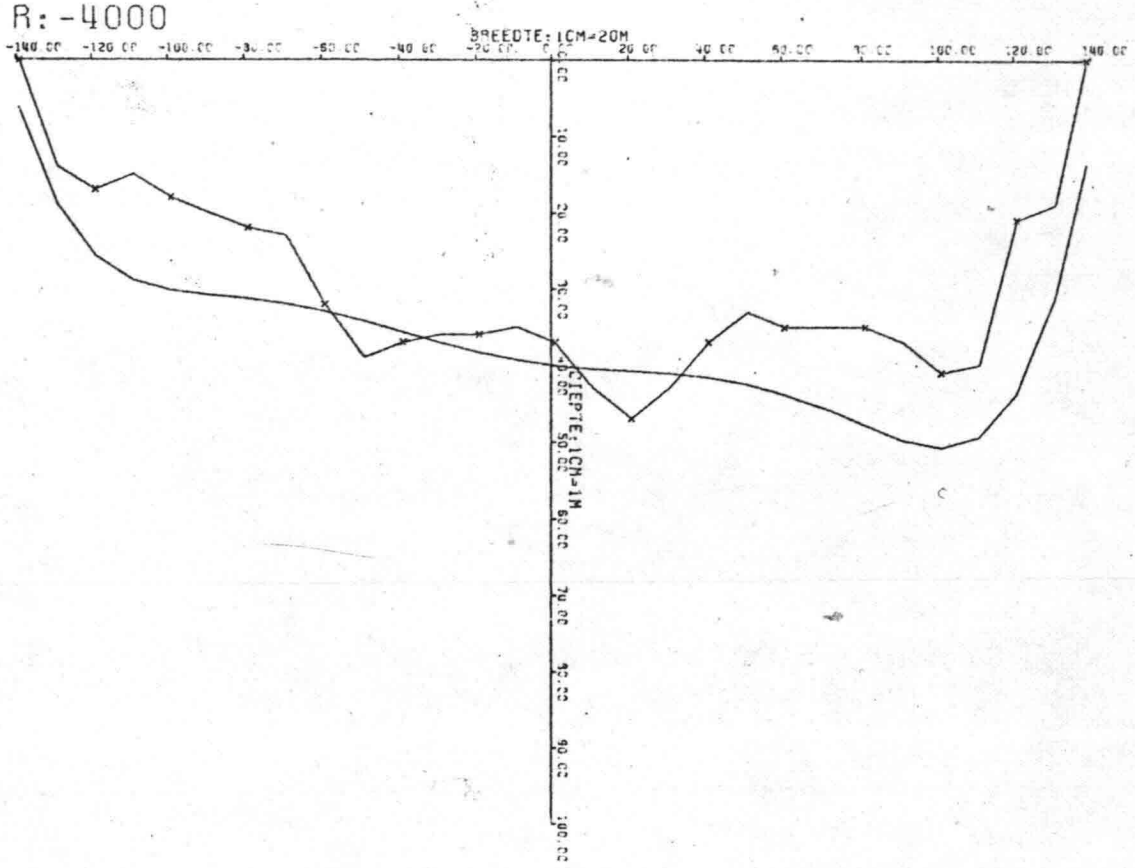

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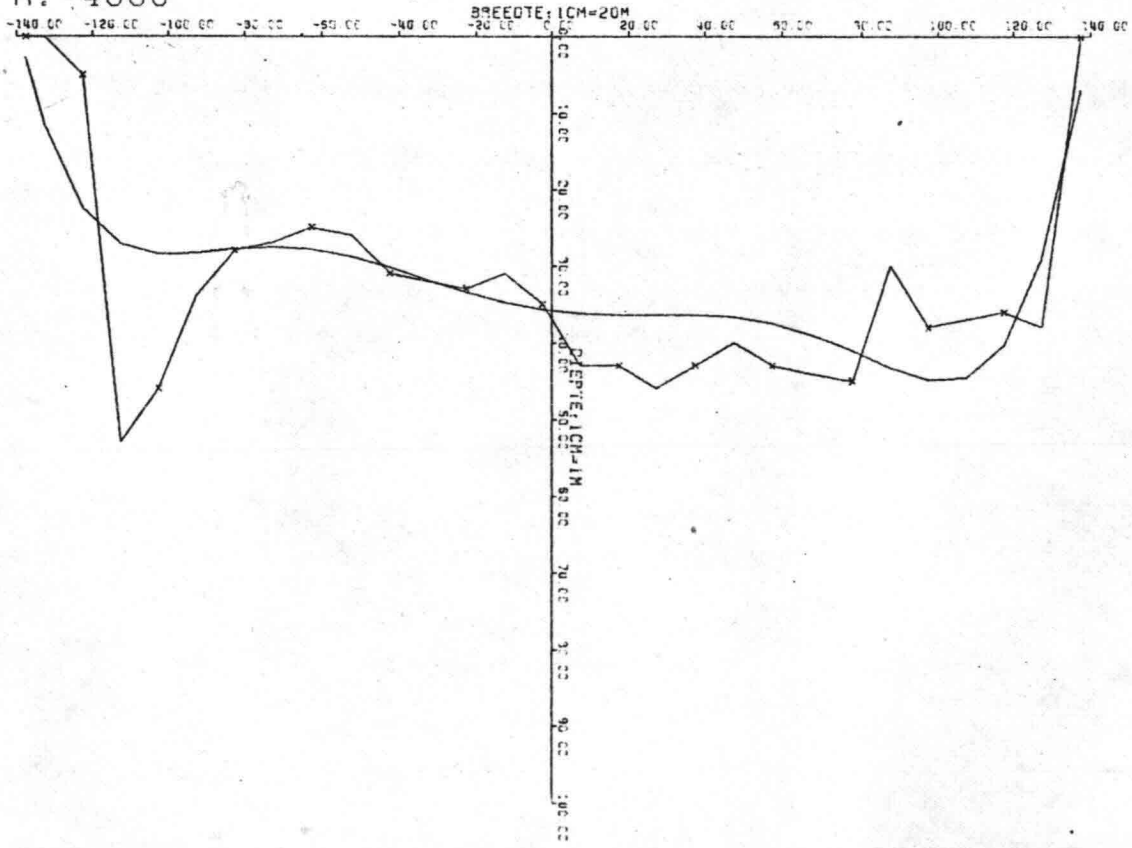

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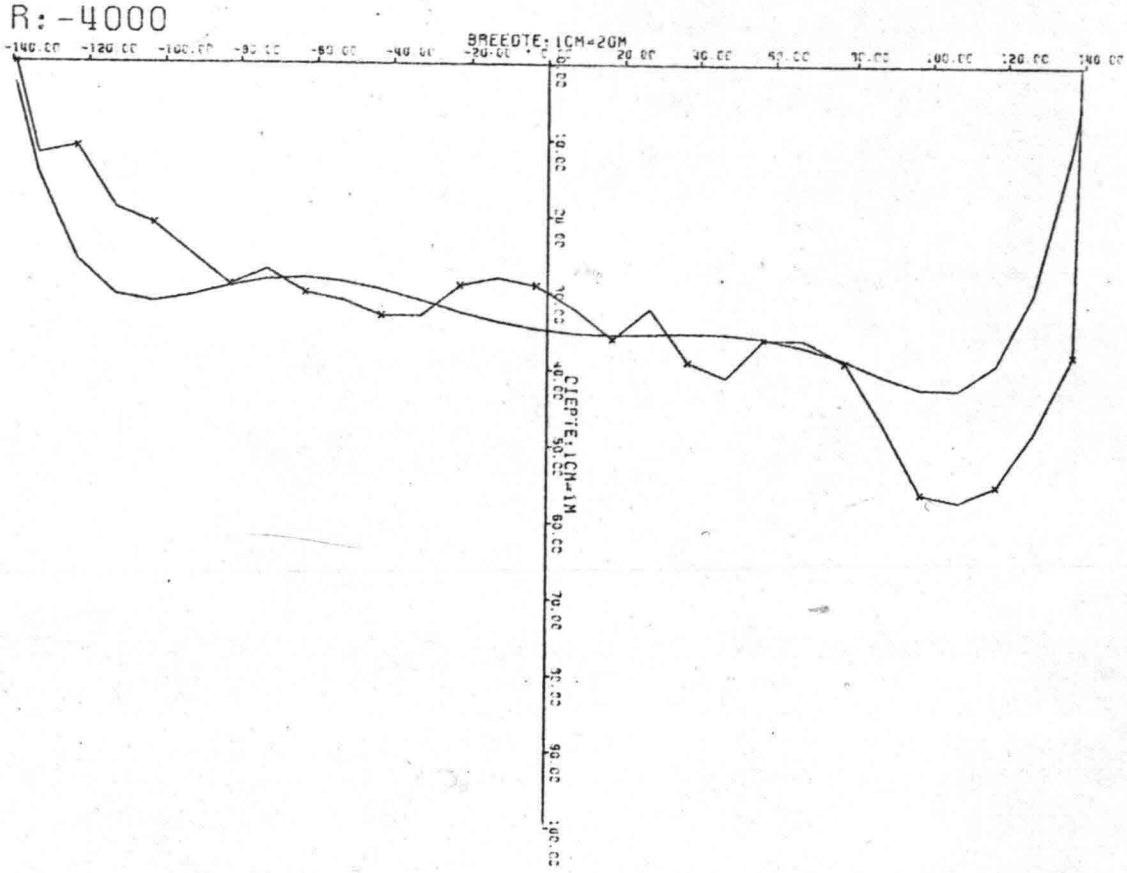

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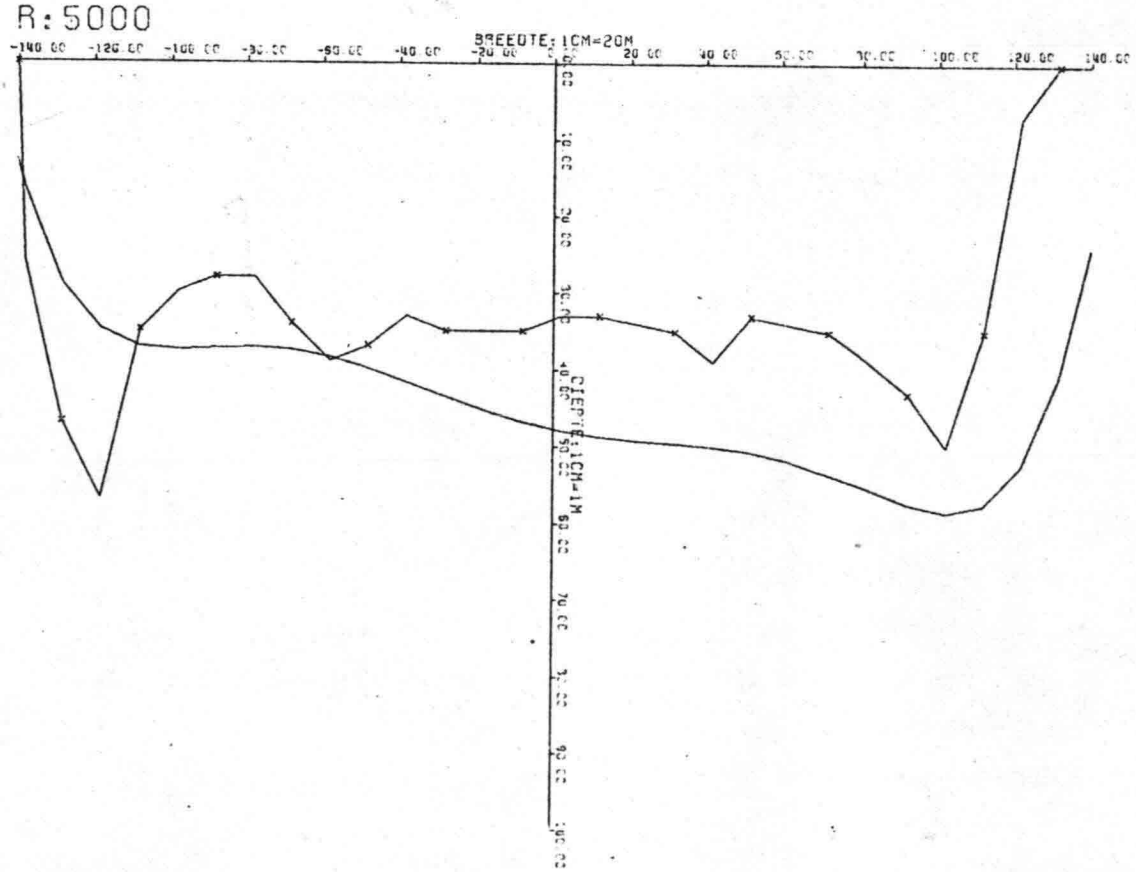

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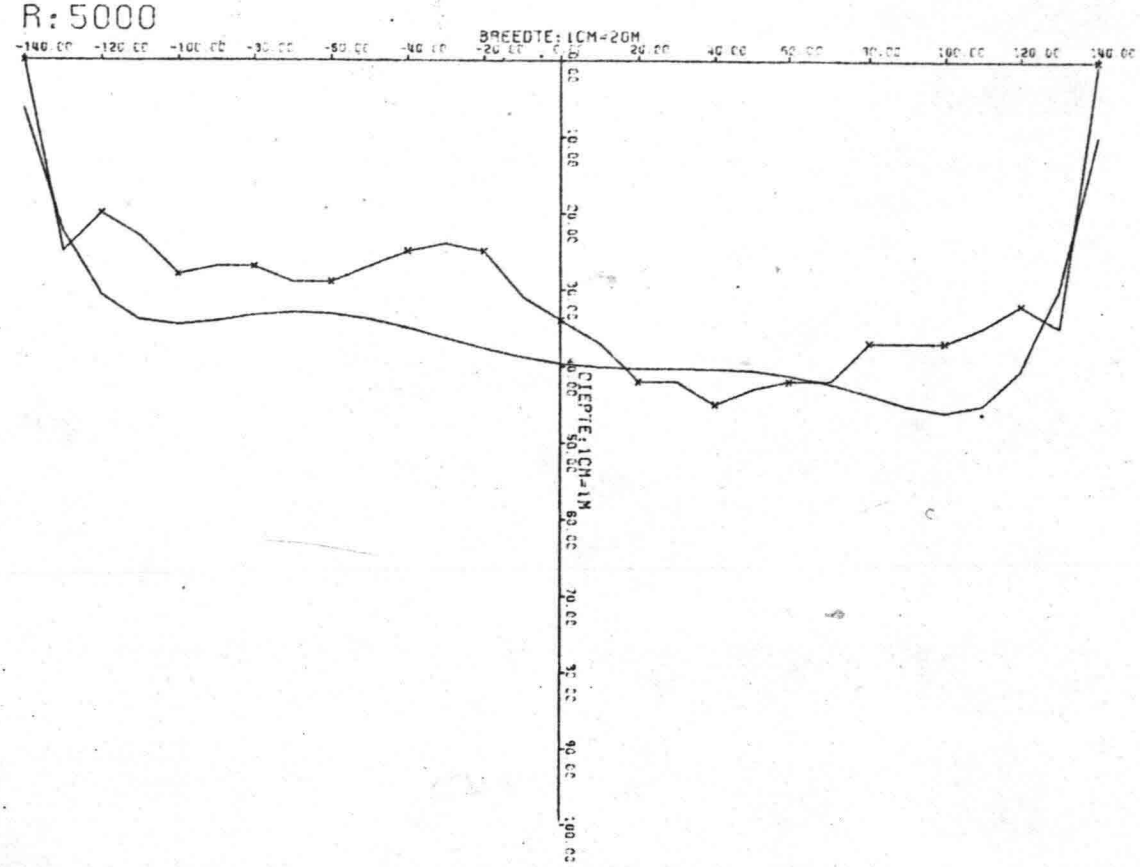

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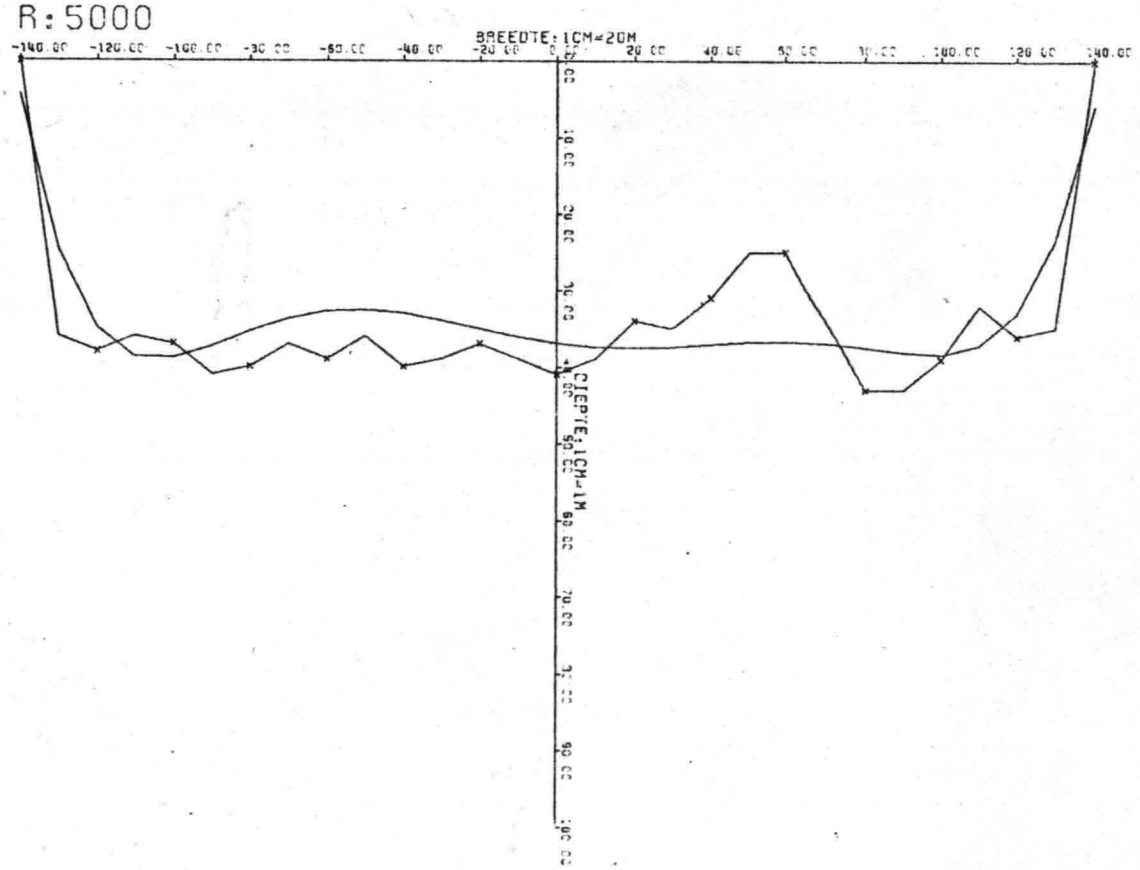

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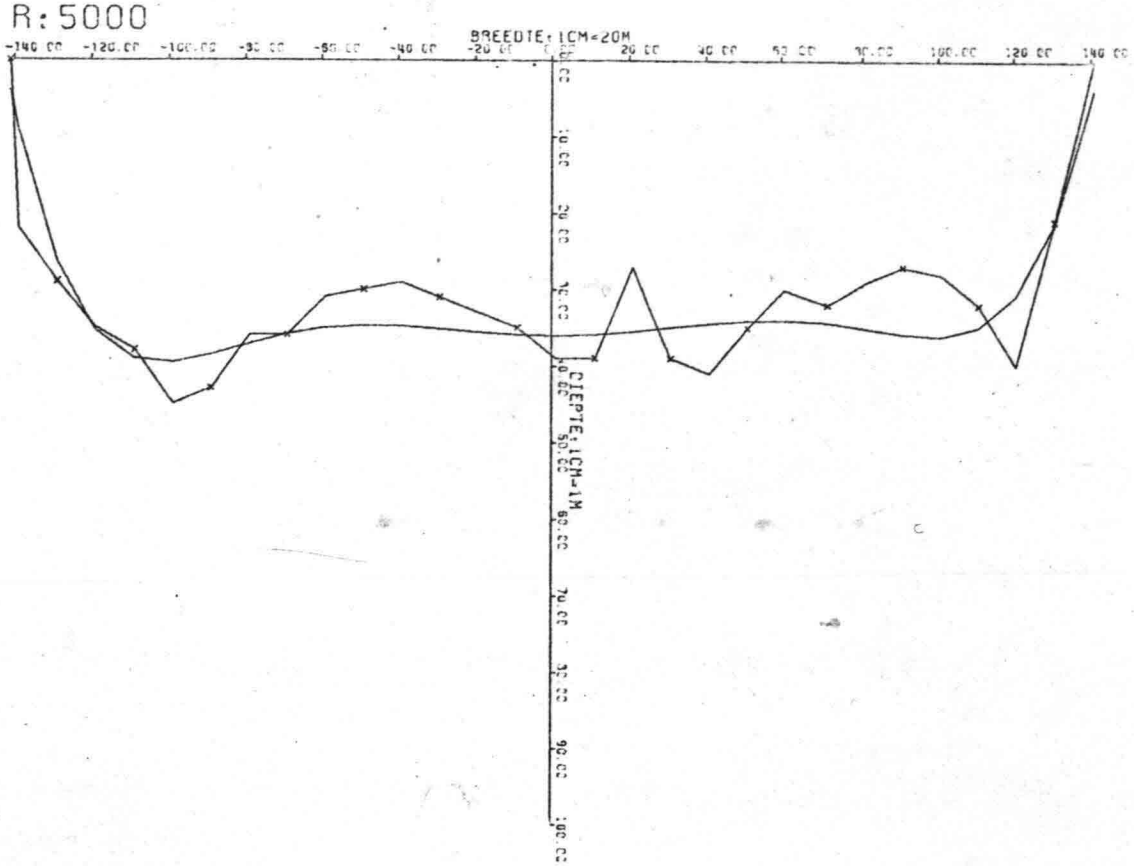

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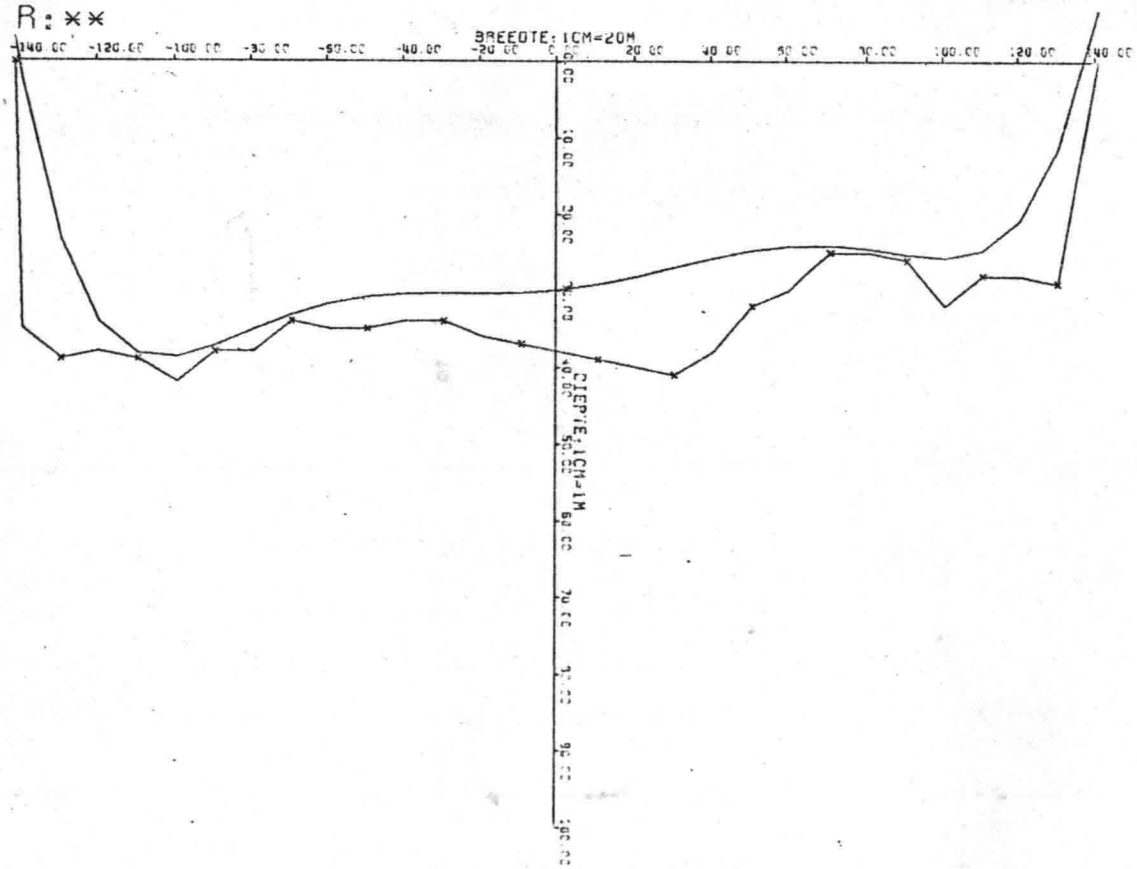
R: **



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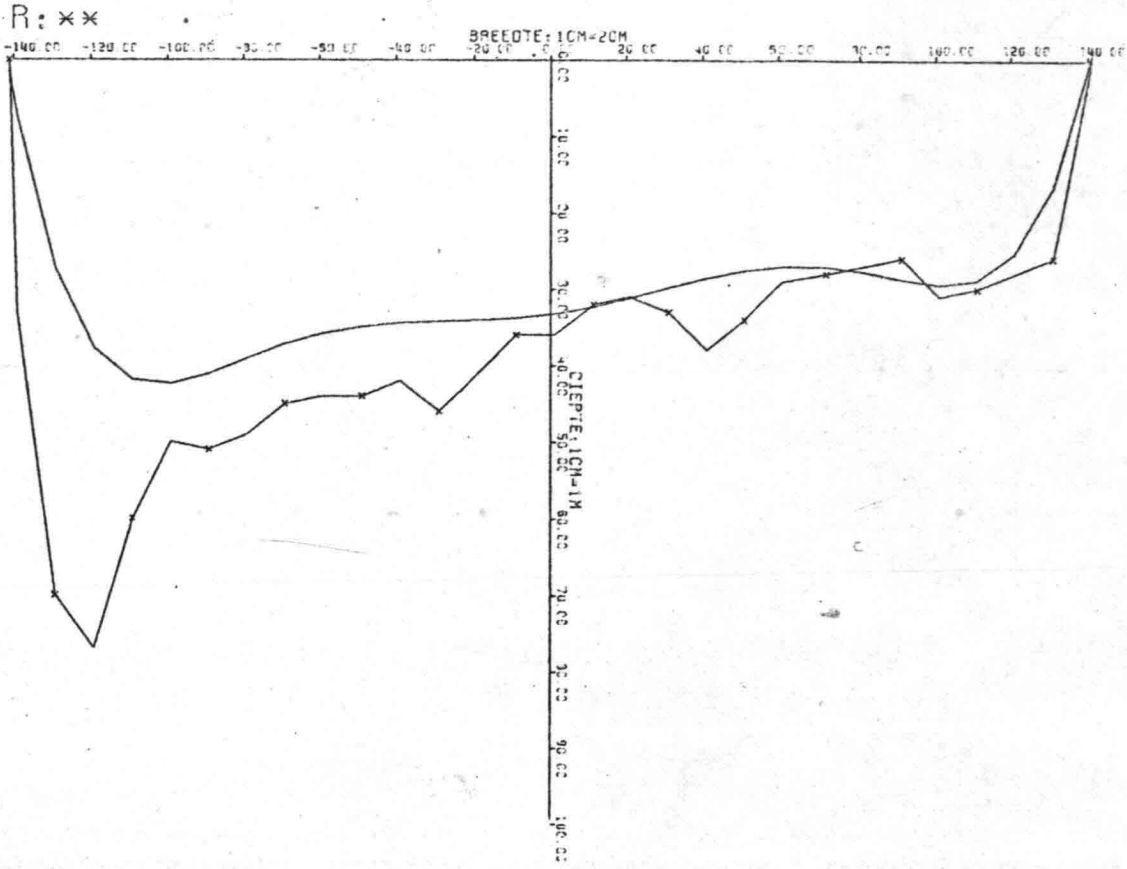
R: **



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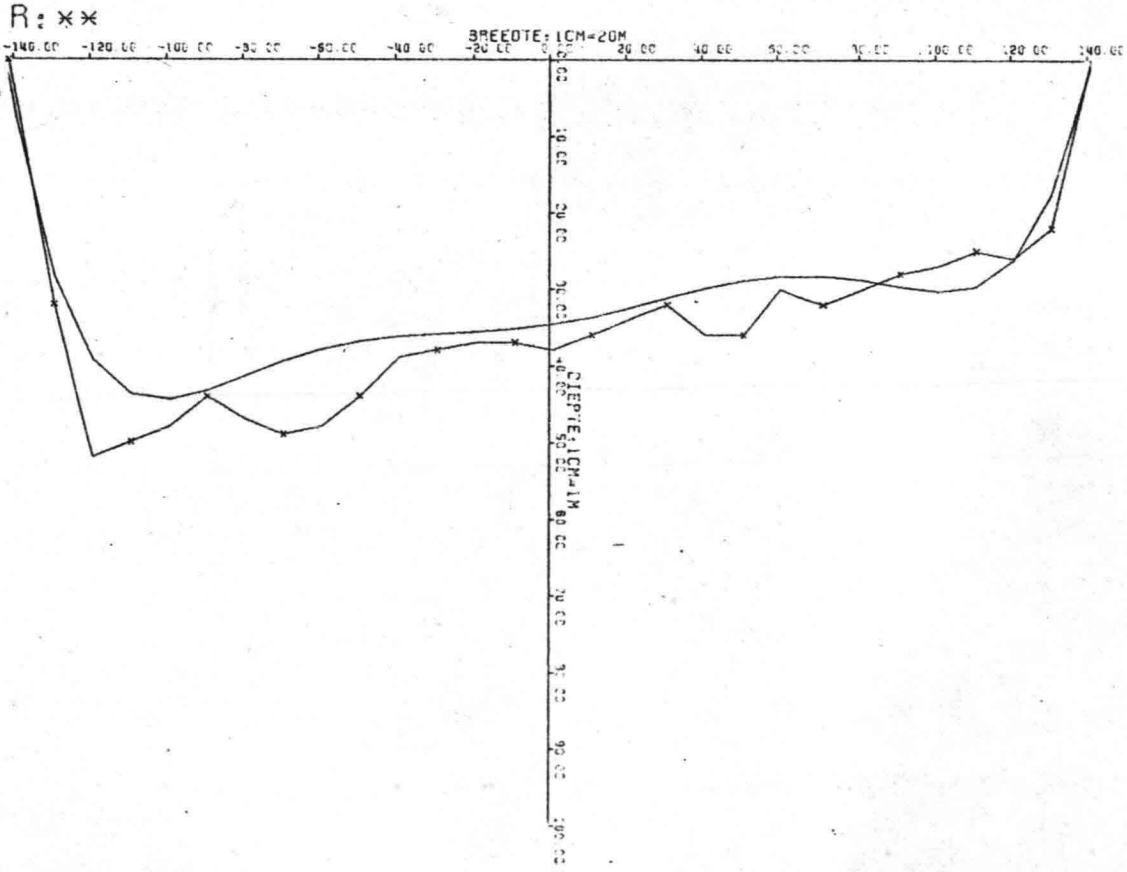

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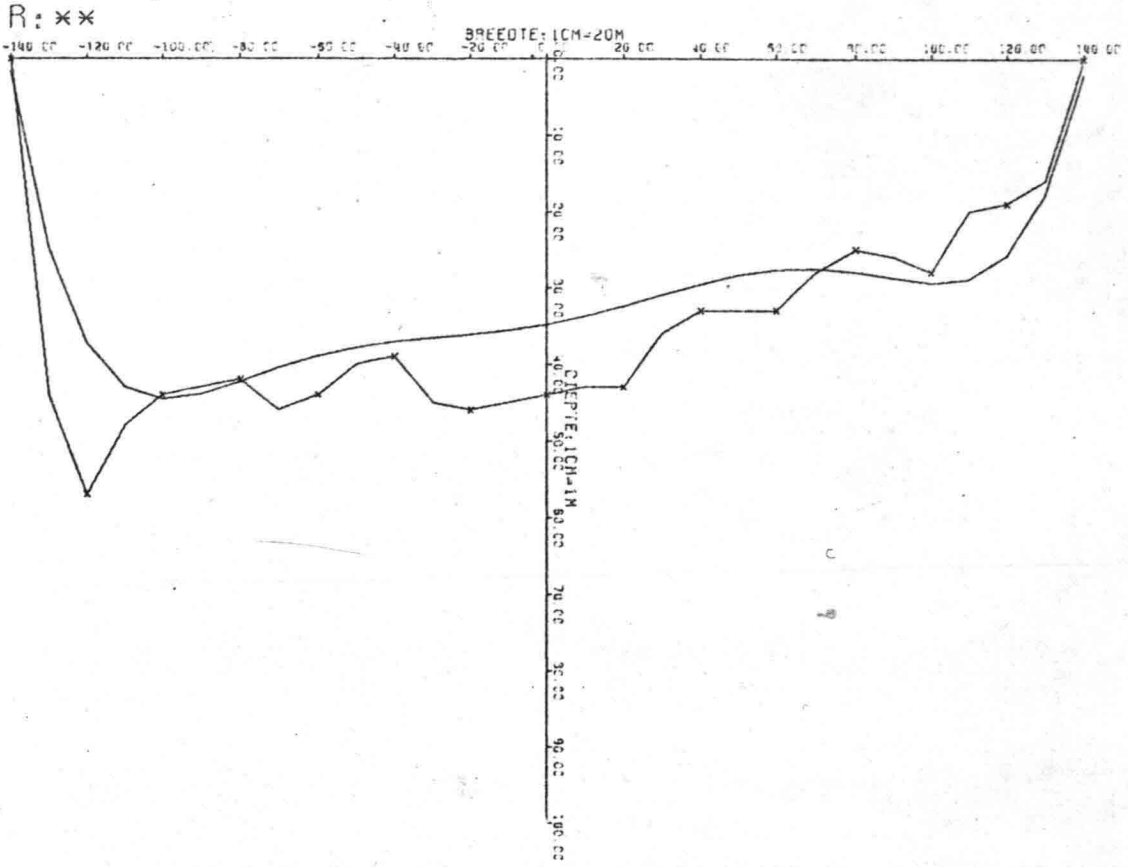

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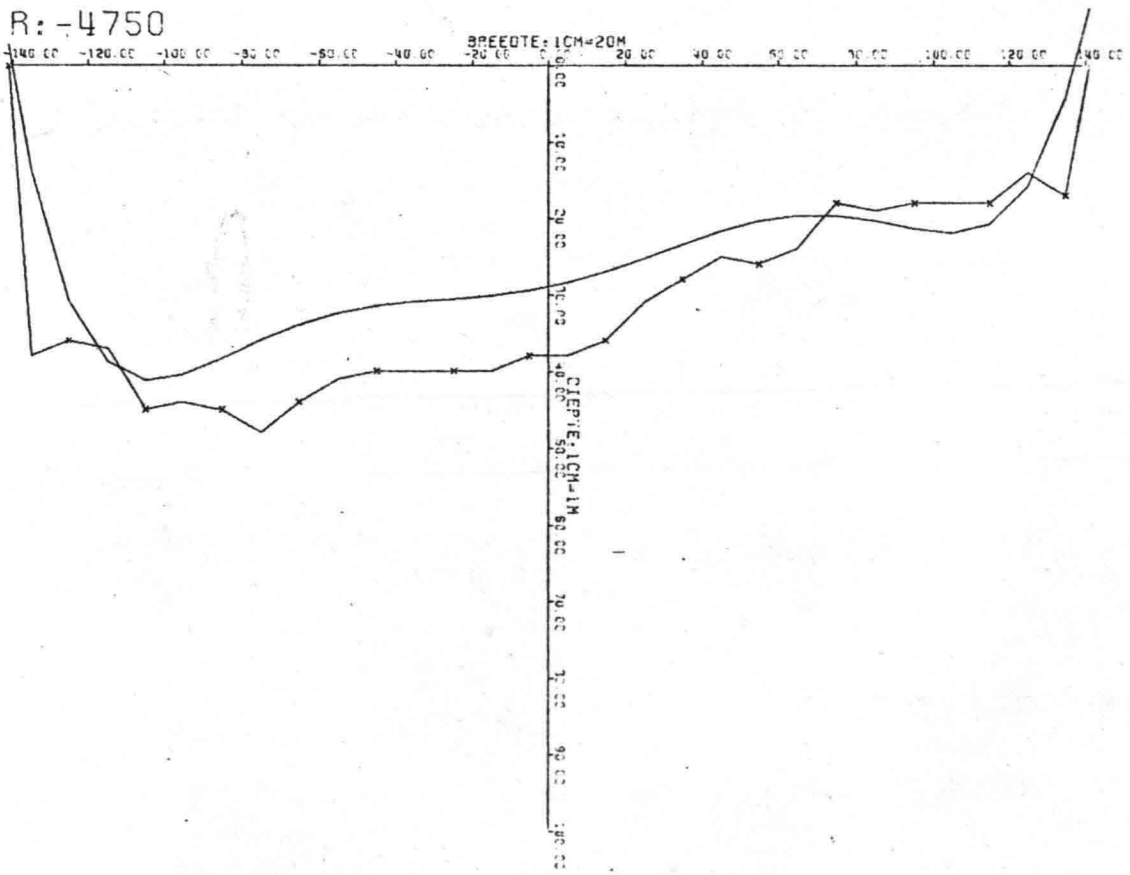
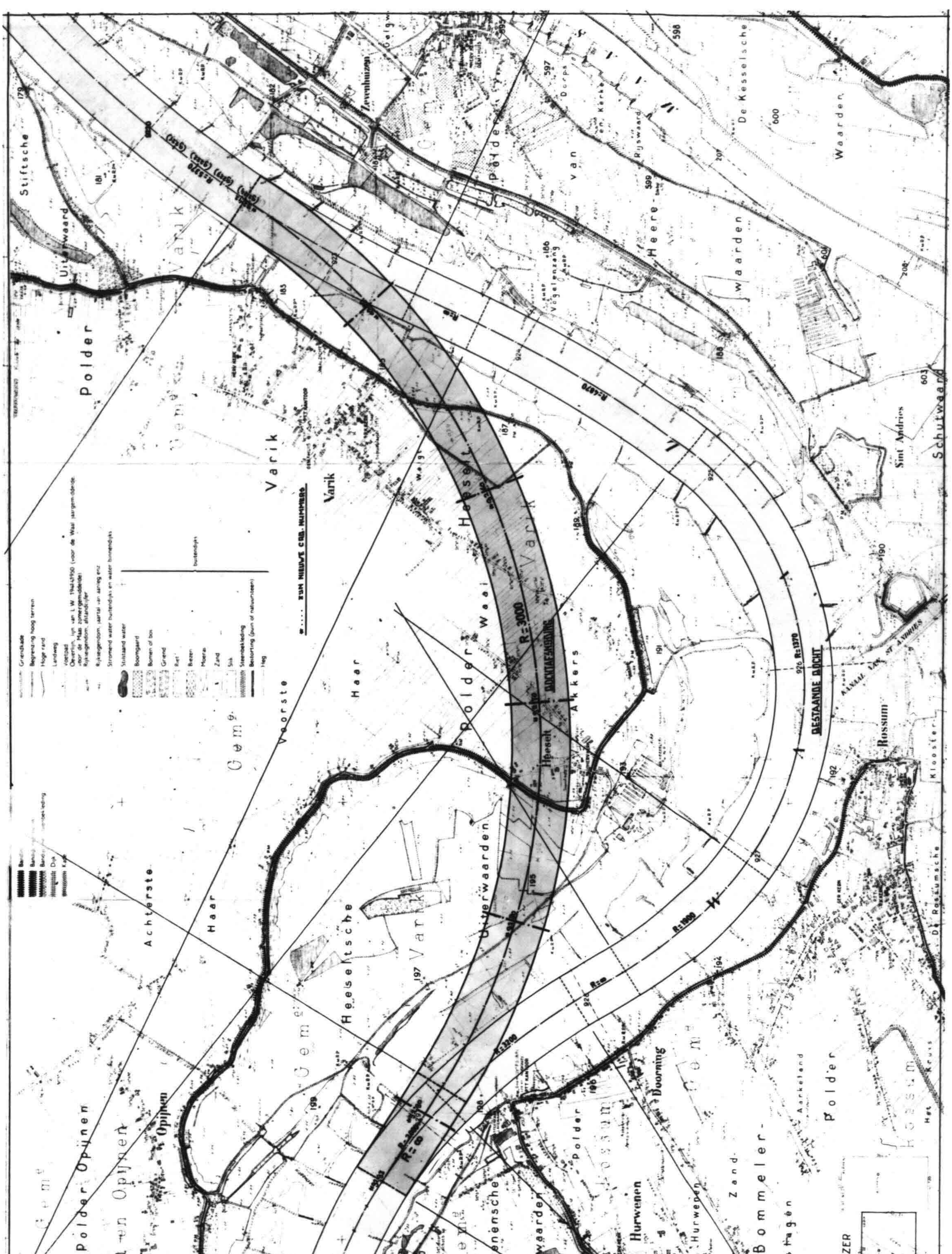




Polder Opijnen
Opijnen
Achterste
Haar
Varik
Heeseltsche
Uiterwaarden
Heesselt
Akkers
Polder
R=3000
BESTAANDE BOCHT
Rossum
Sint Andries
Hurwenen
Doorning
Bommeler
De Kesselsche
Waarden
Schutwaard
BLADWIJZER
SERIE III

BIJLAGE 12

DWARSPROFIELEN

BOCHTAFSNYDING ST. ANDRIES

R = 3000 m

km 921^{E} t/m km 935^{A}

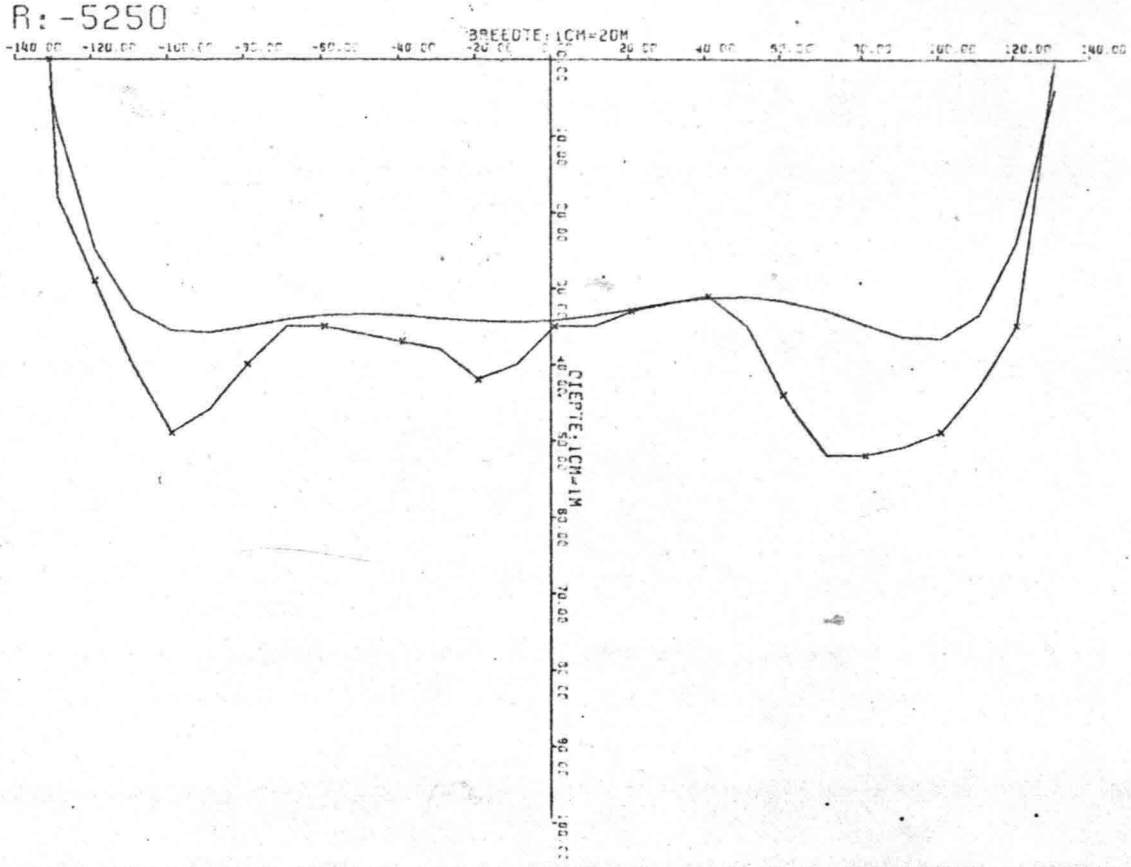
—×—×—×—×— Bestaande dwarsprofiel.

——————— Berekende dwarsprofiel.

BYLAGE 13

CRD: 9215

R: -5250



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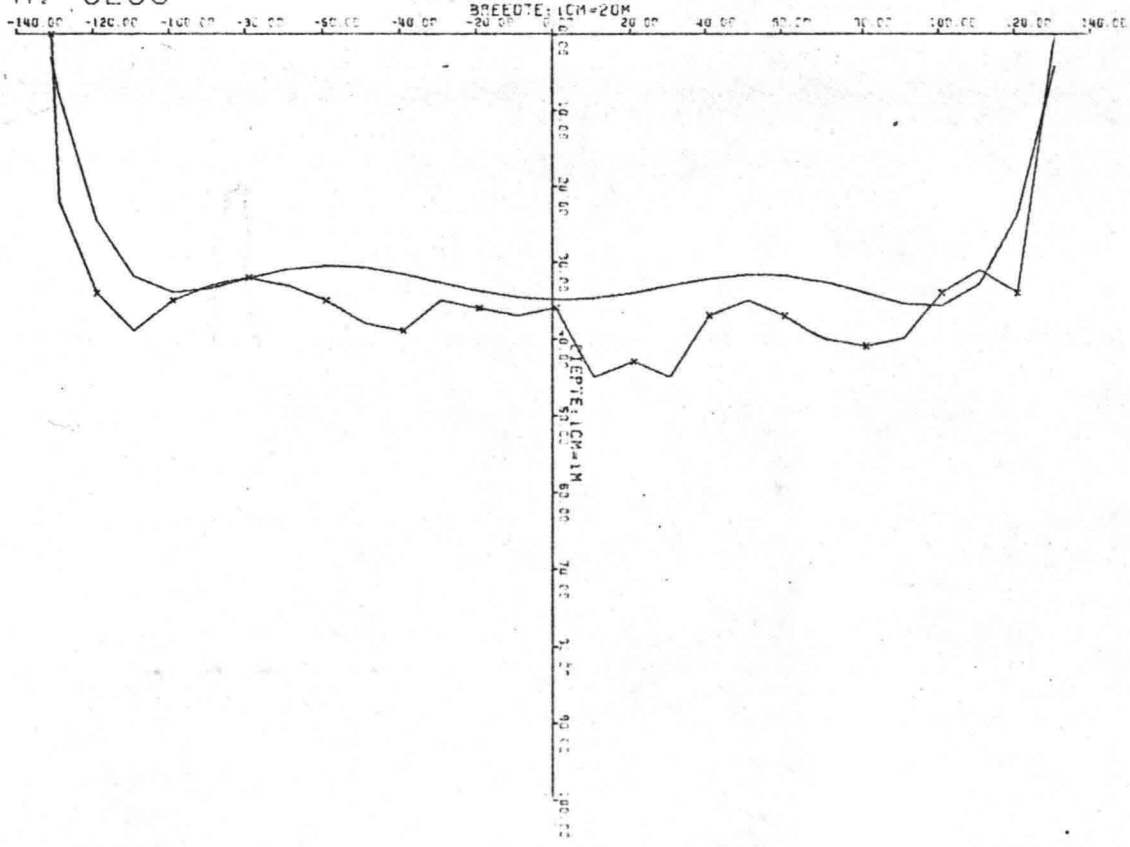

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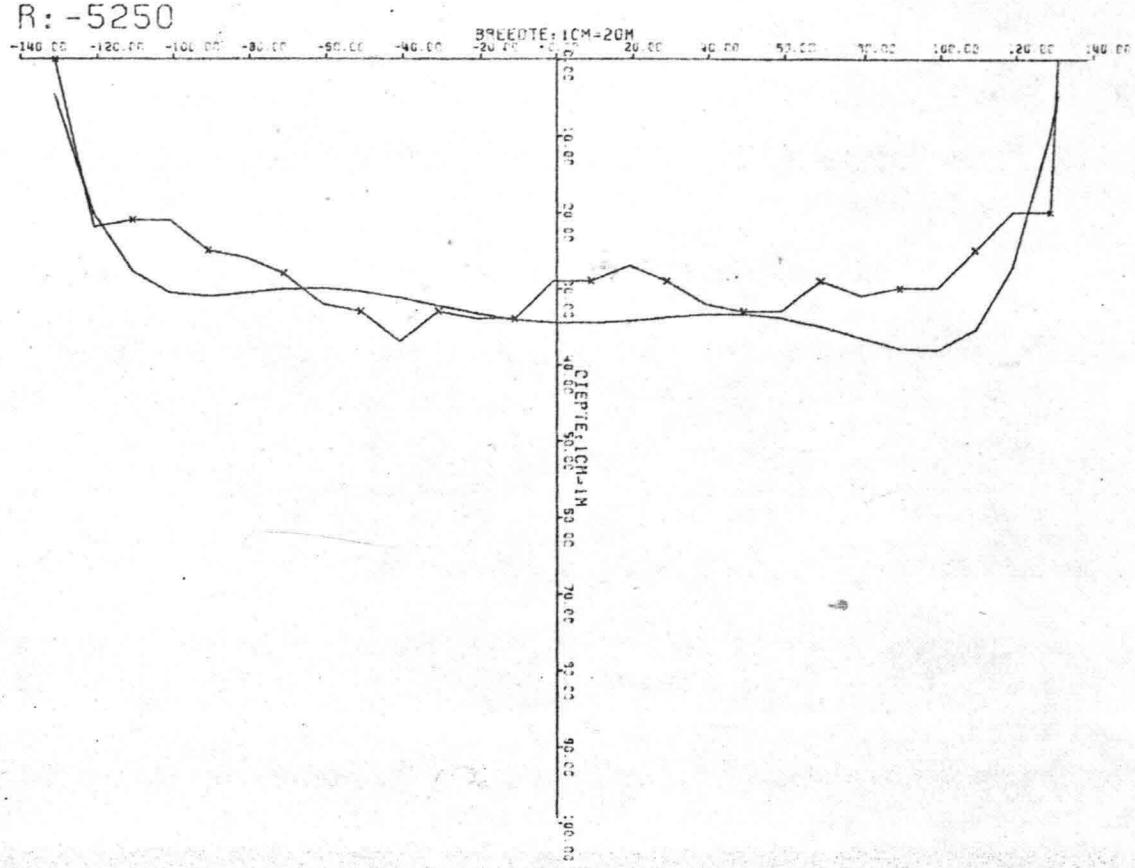
R: -5250



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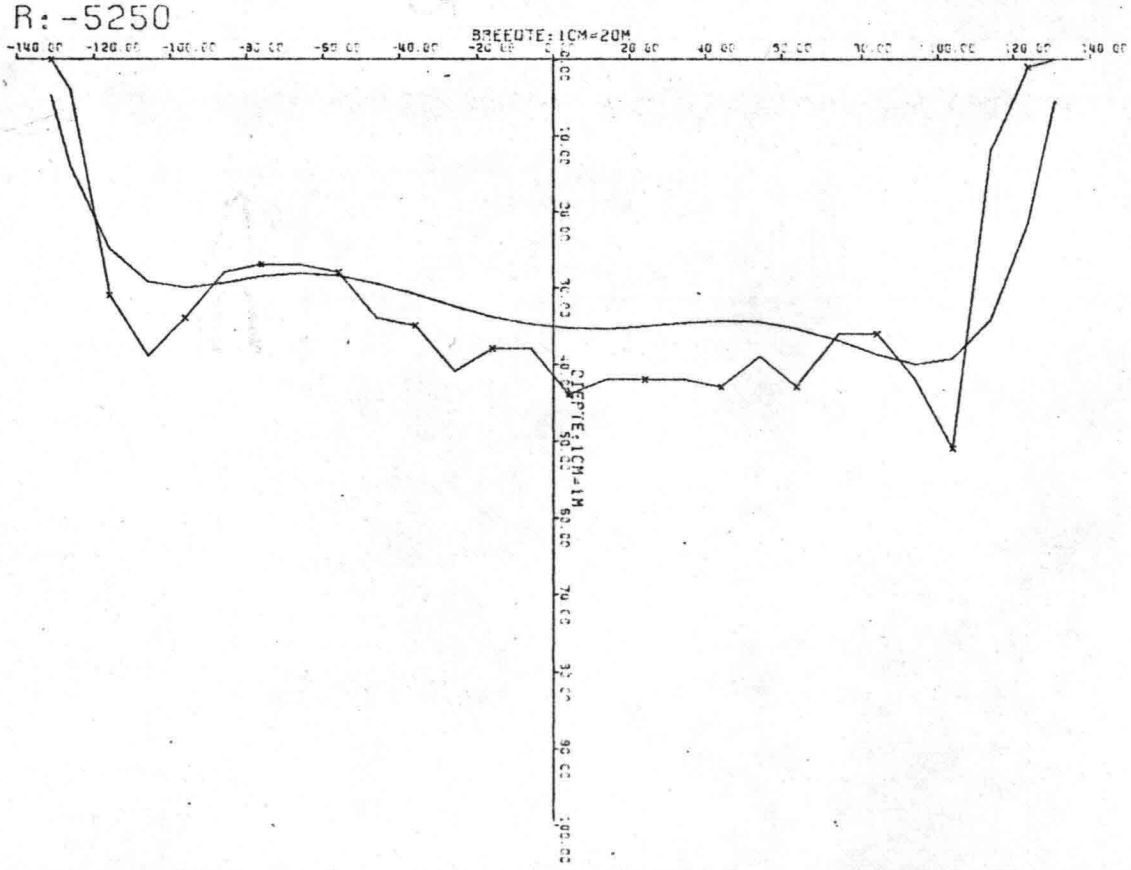

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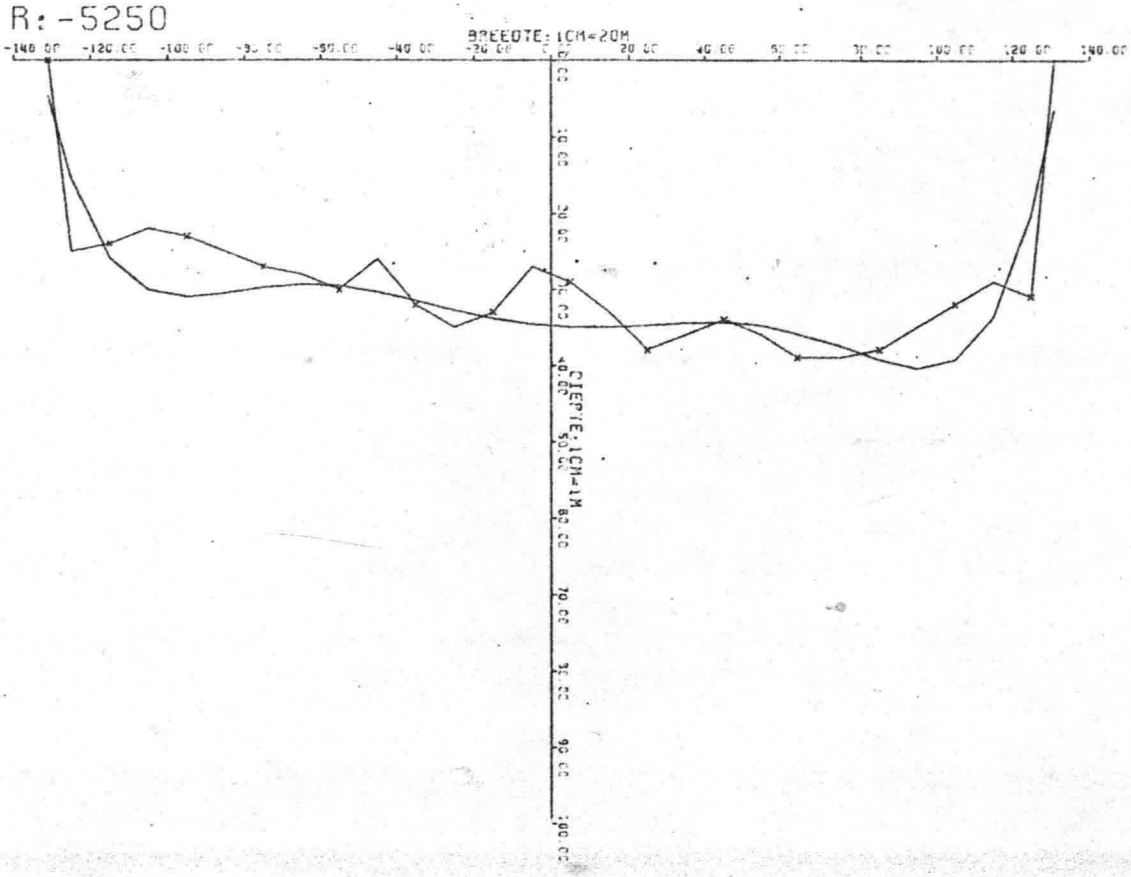
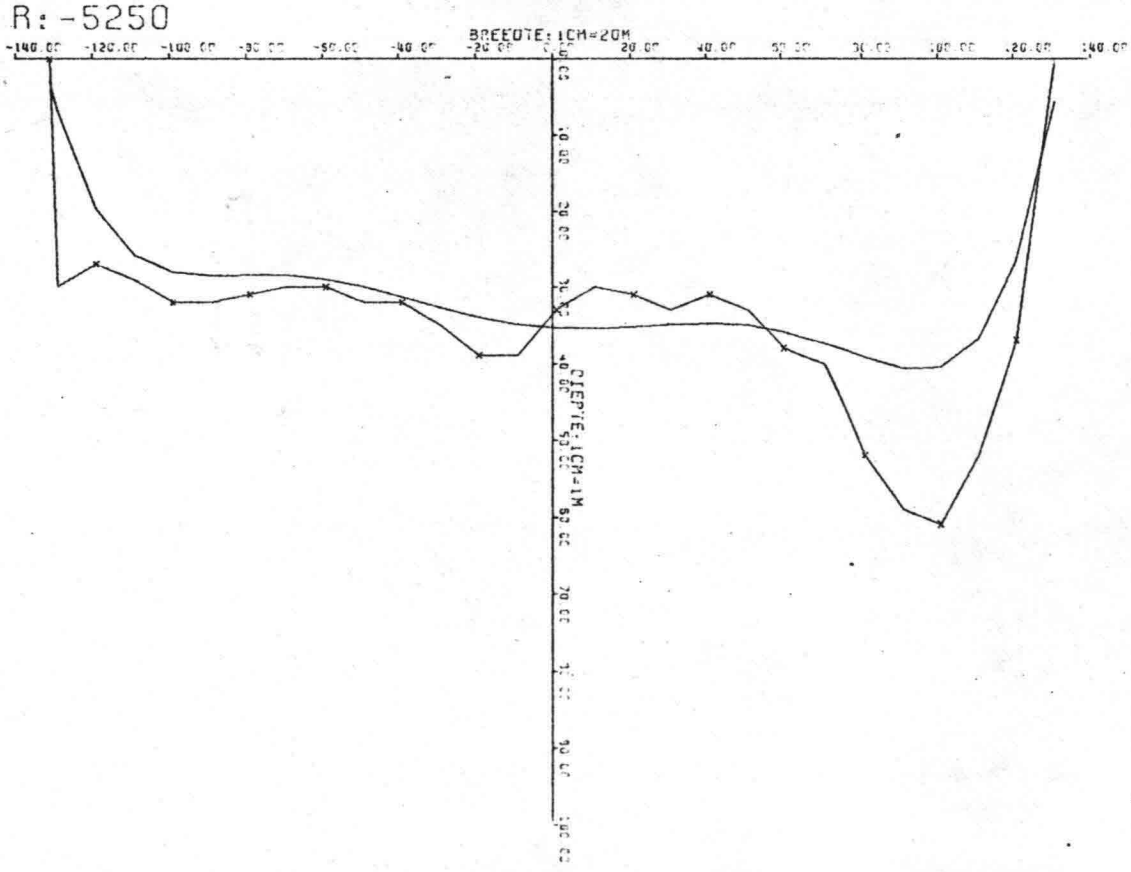


CRD: 9222

R: -5250



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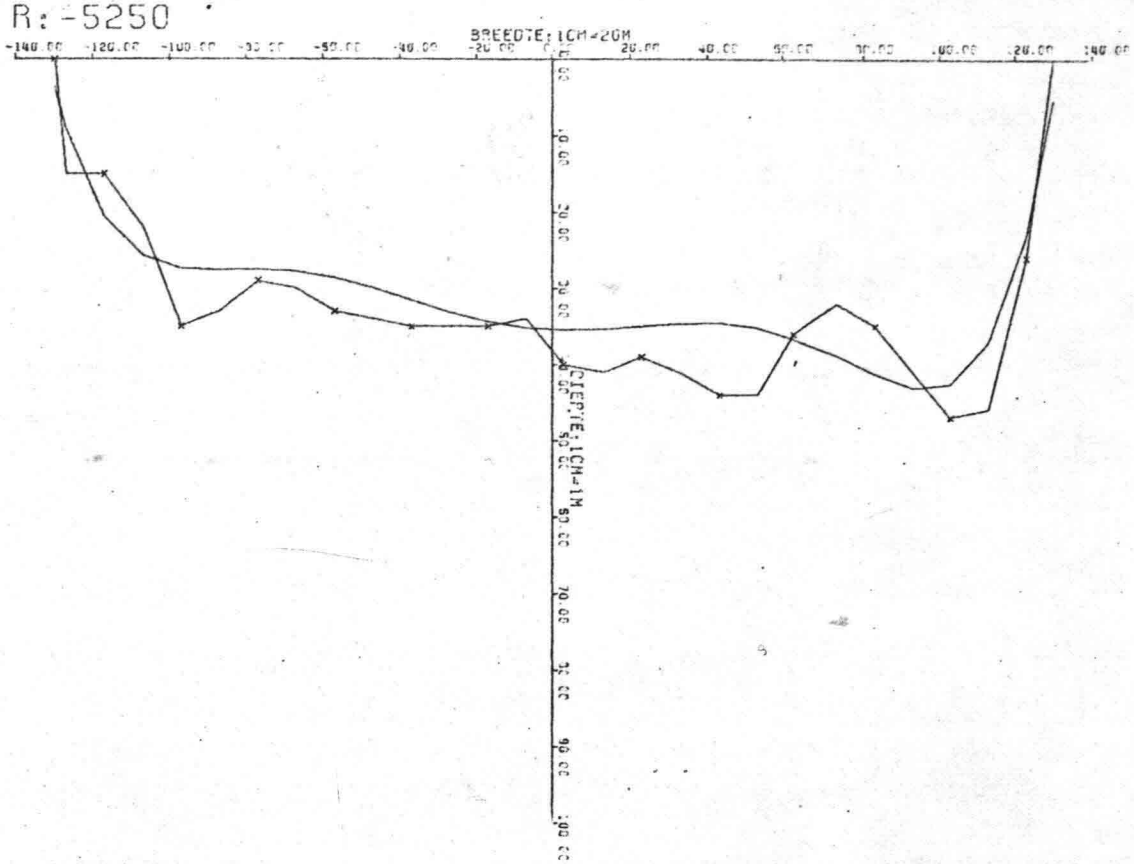

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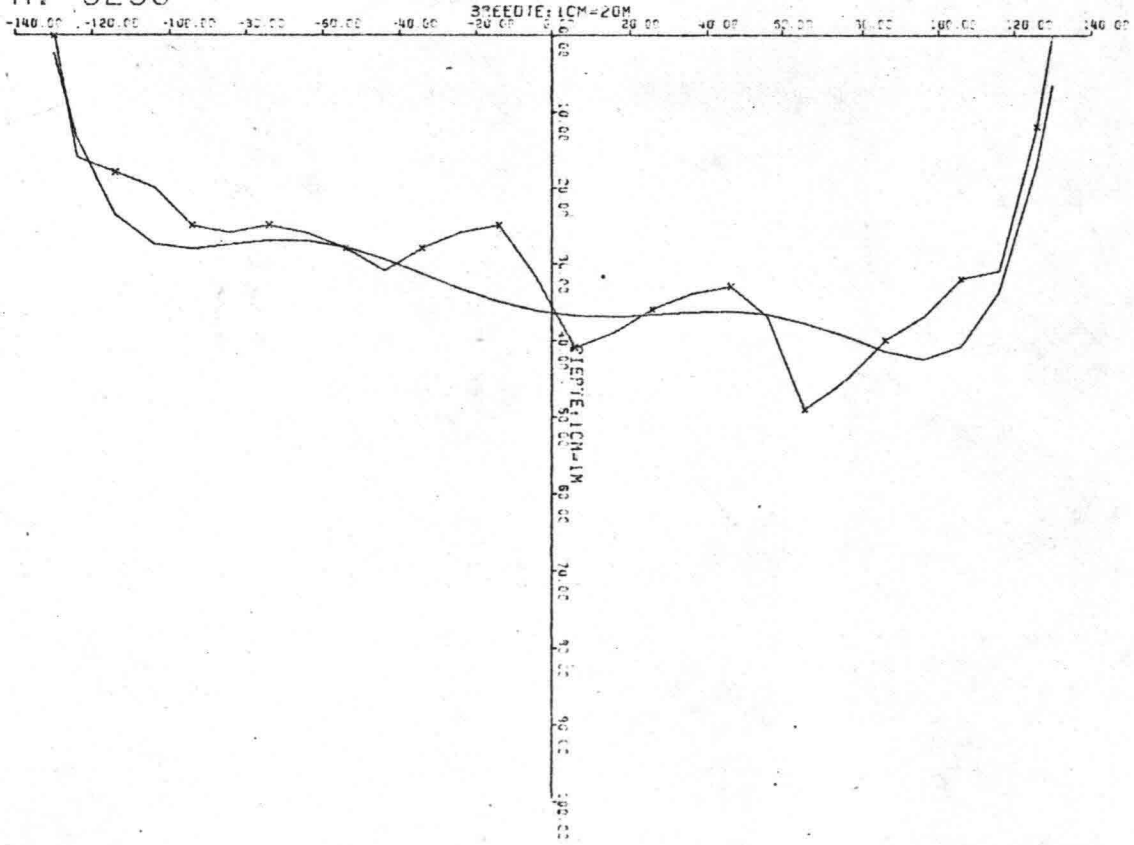

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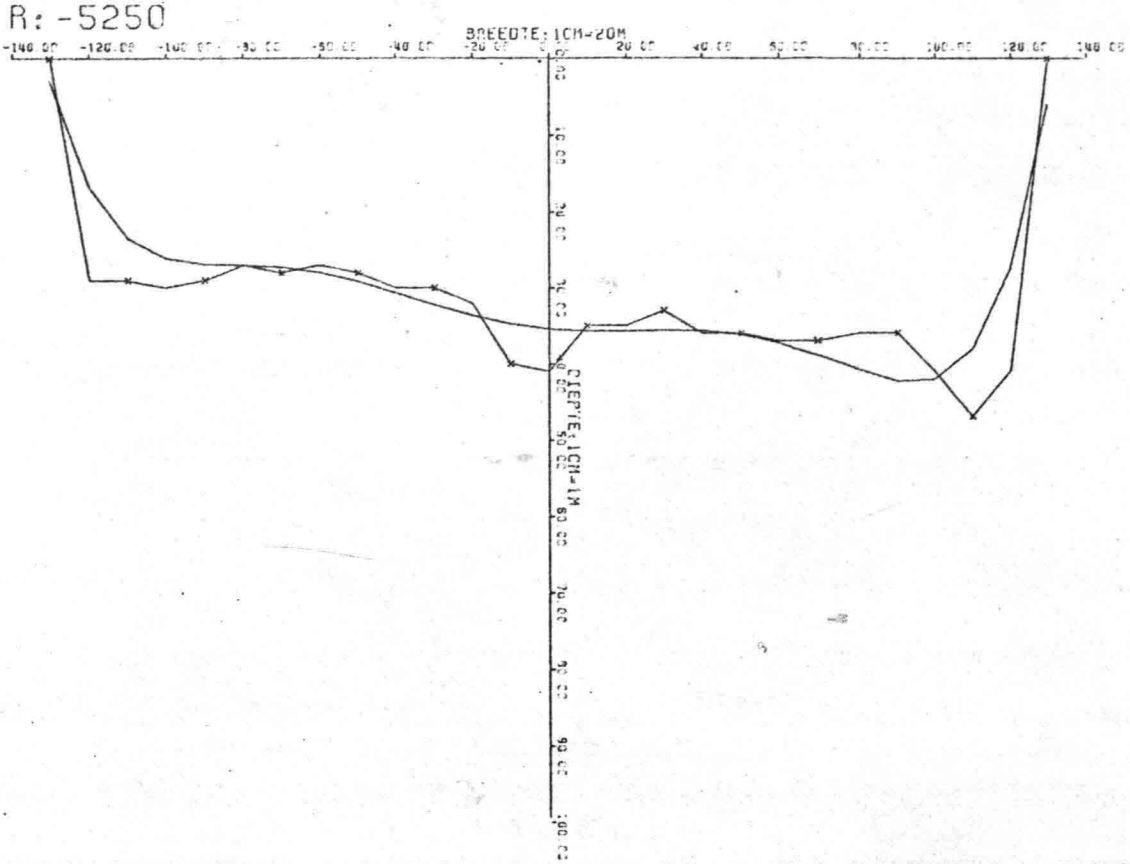

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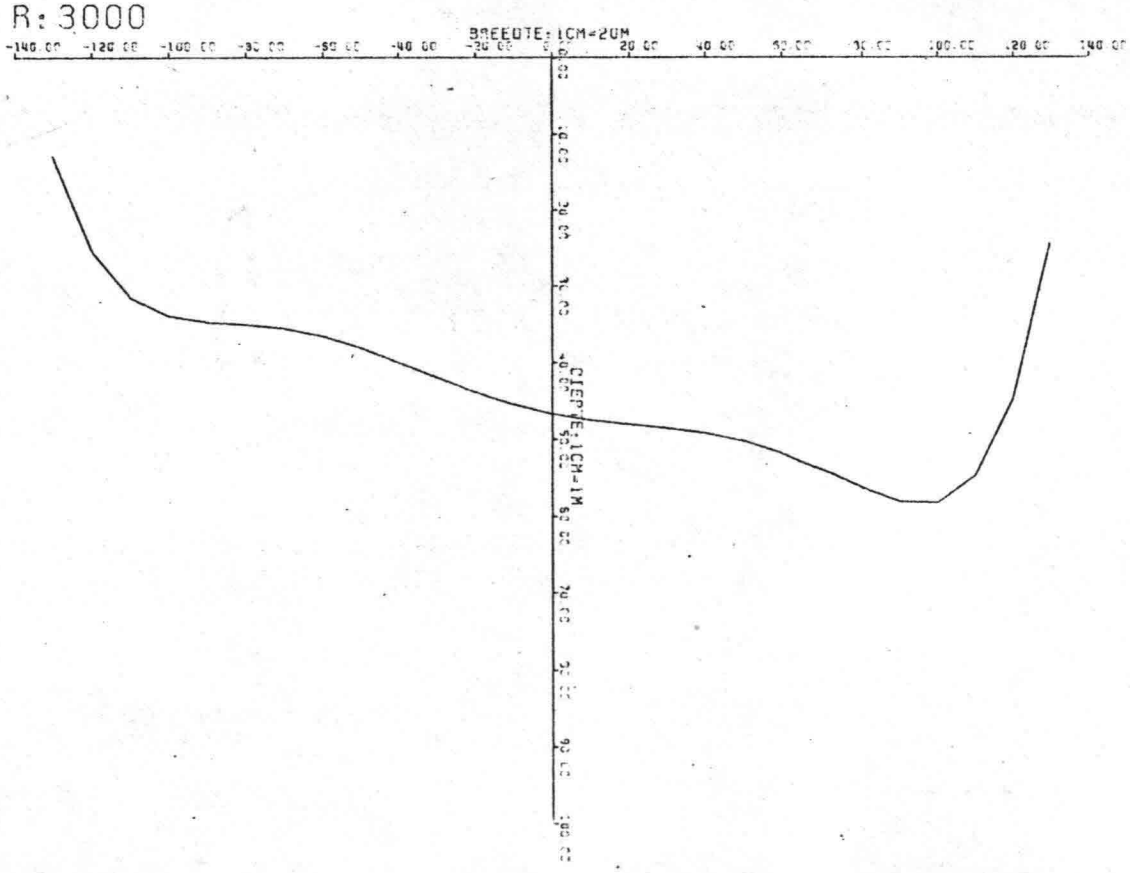

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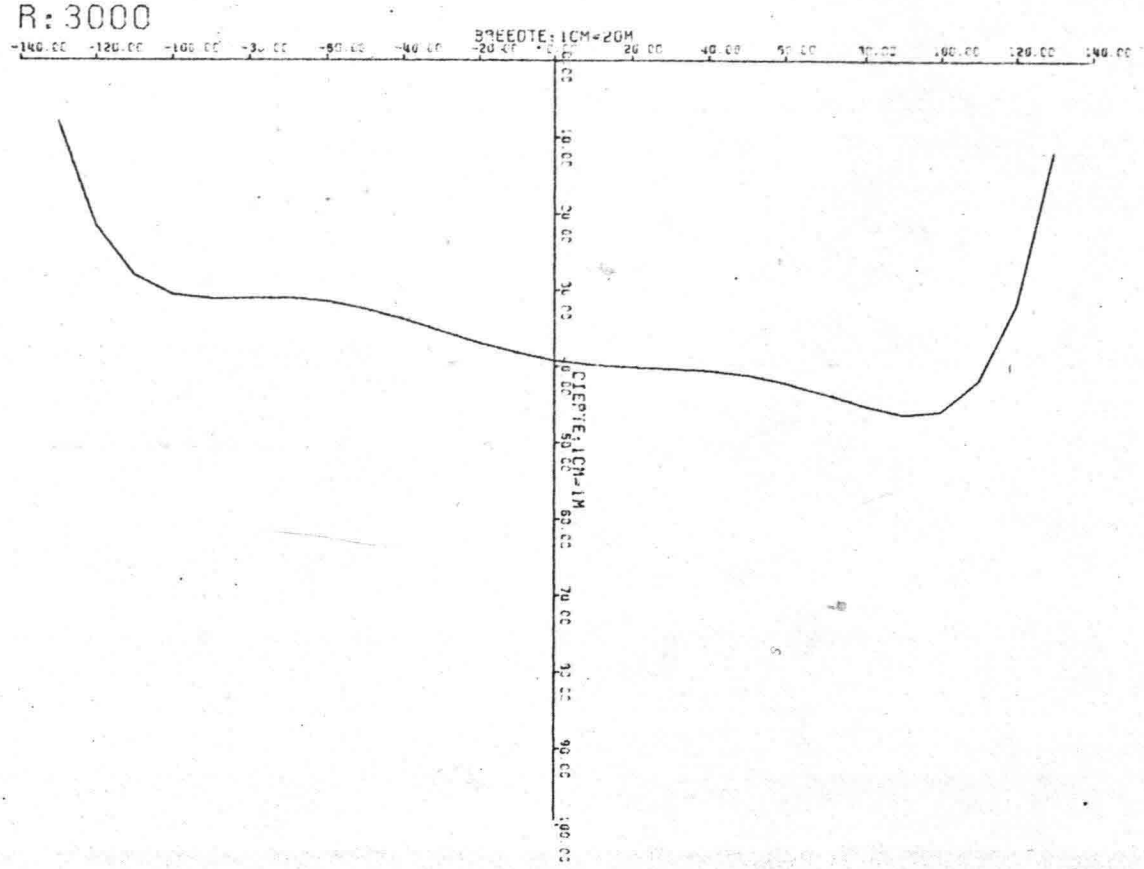

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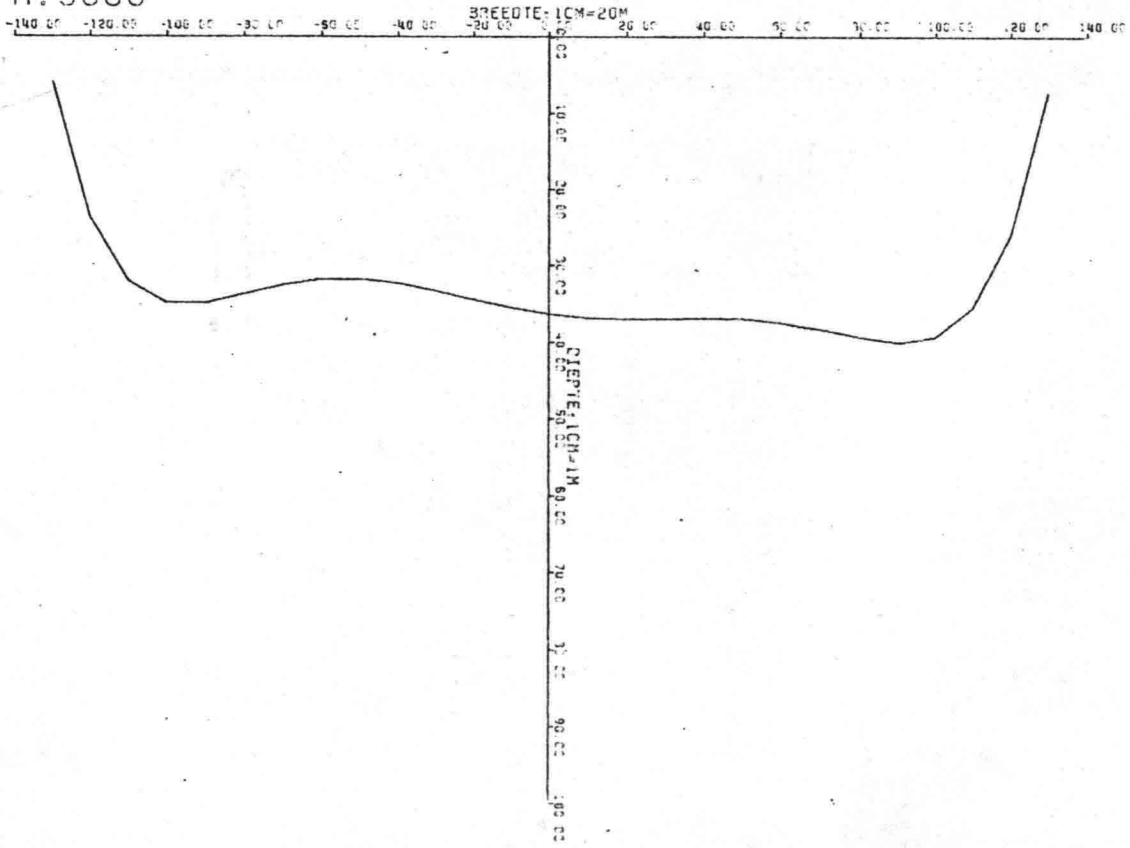

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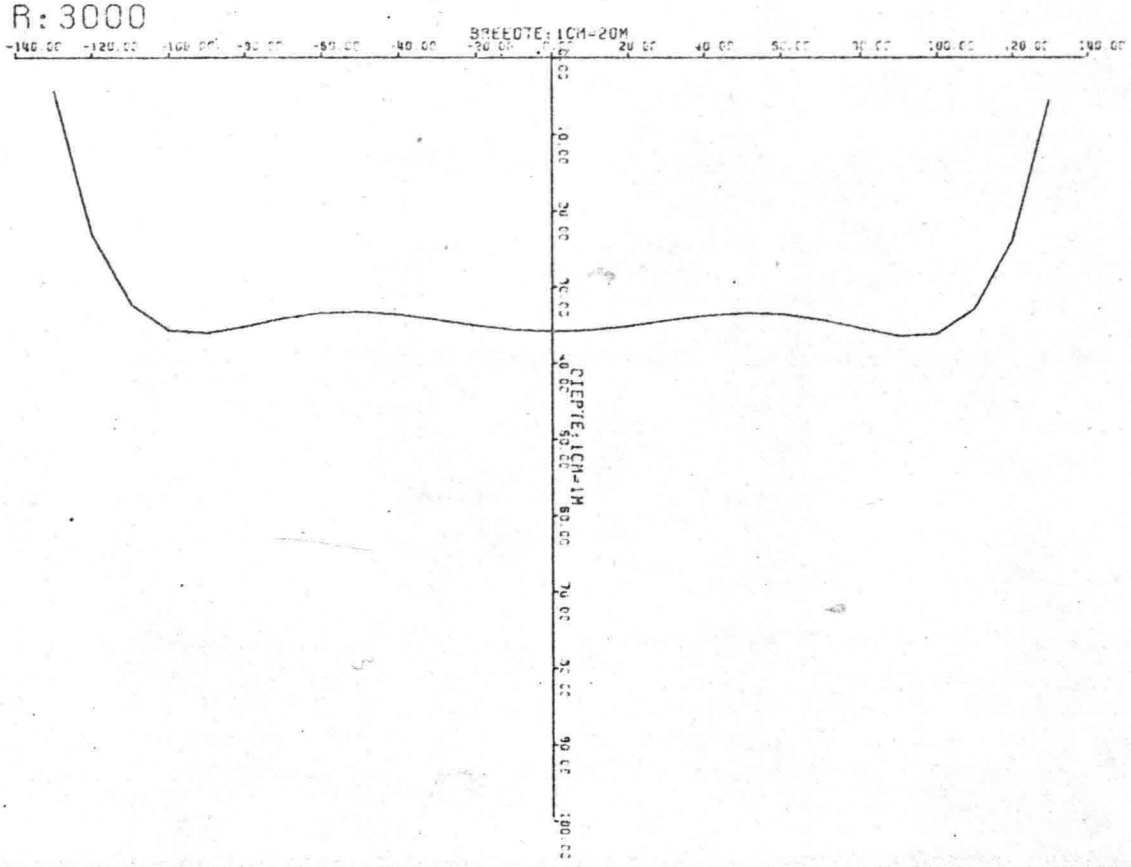

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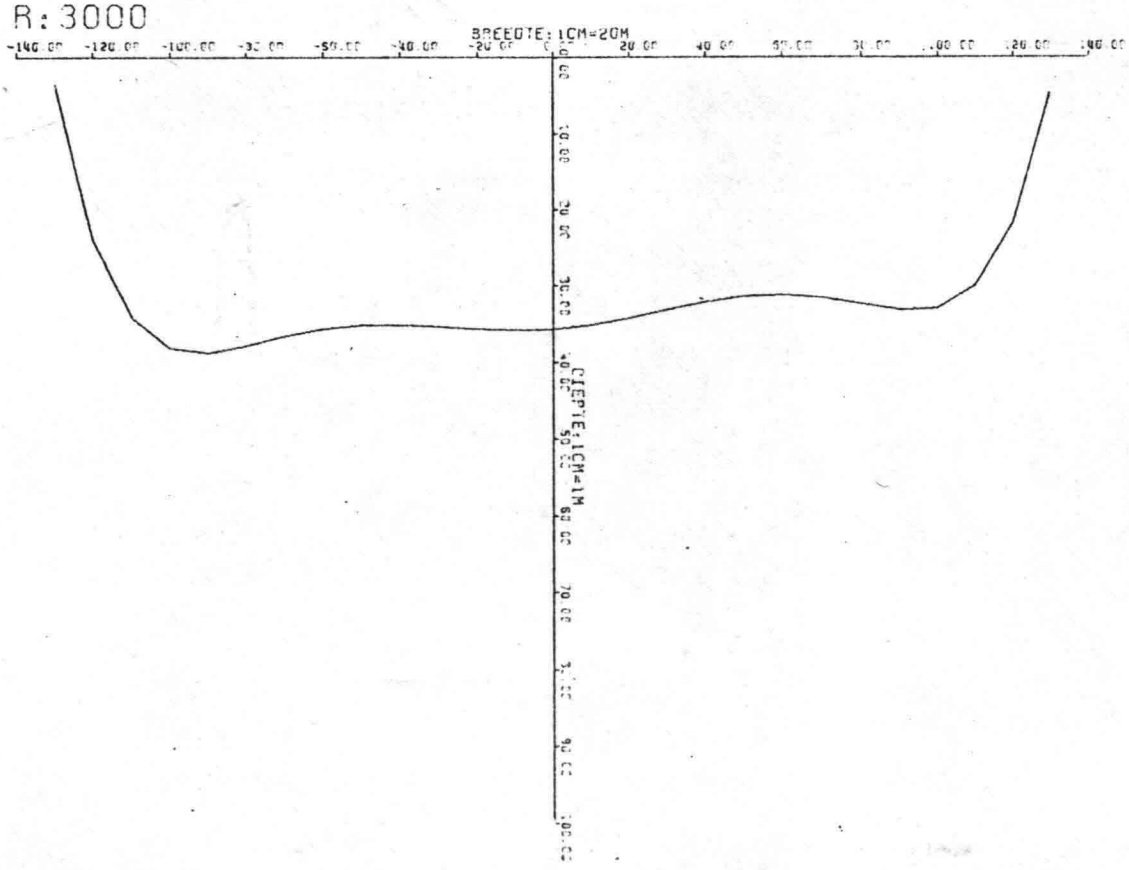

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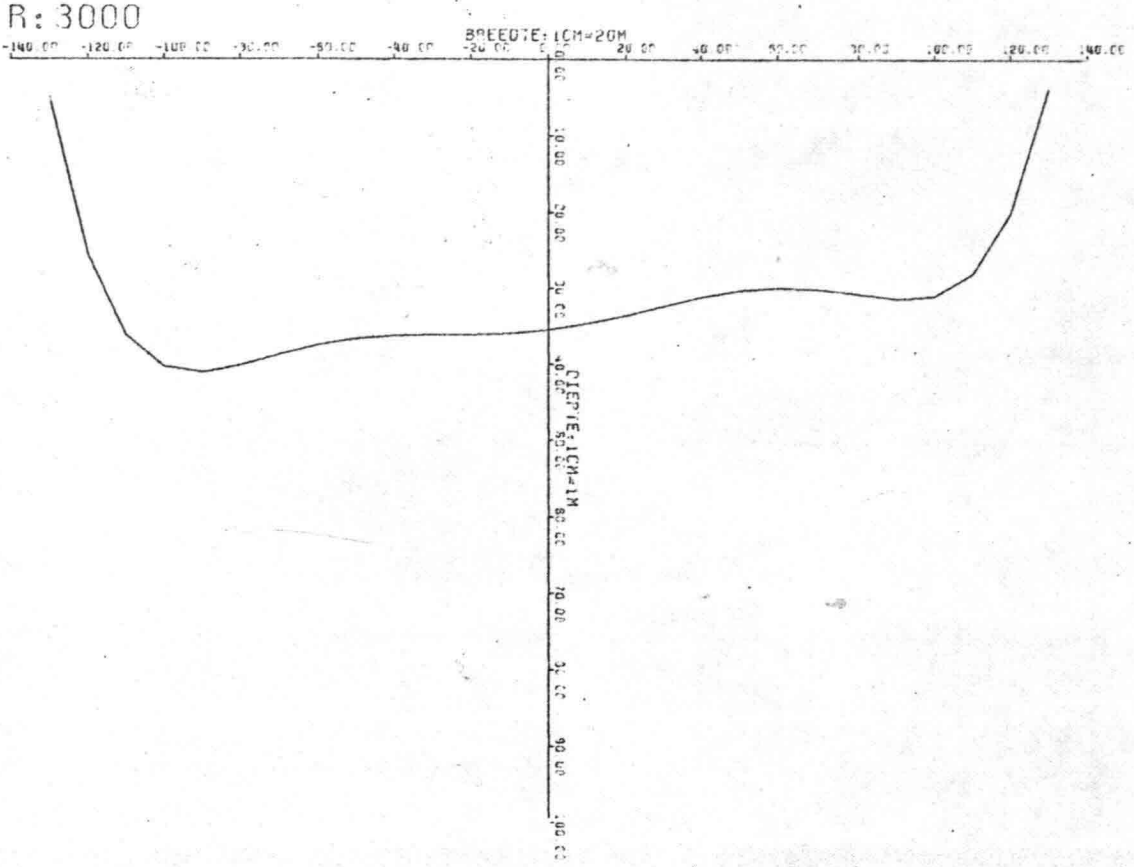

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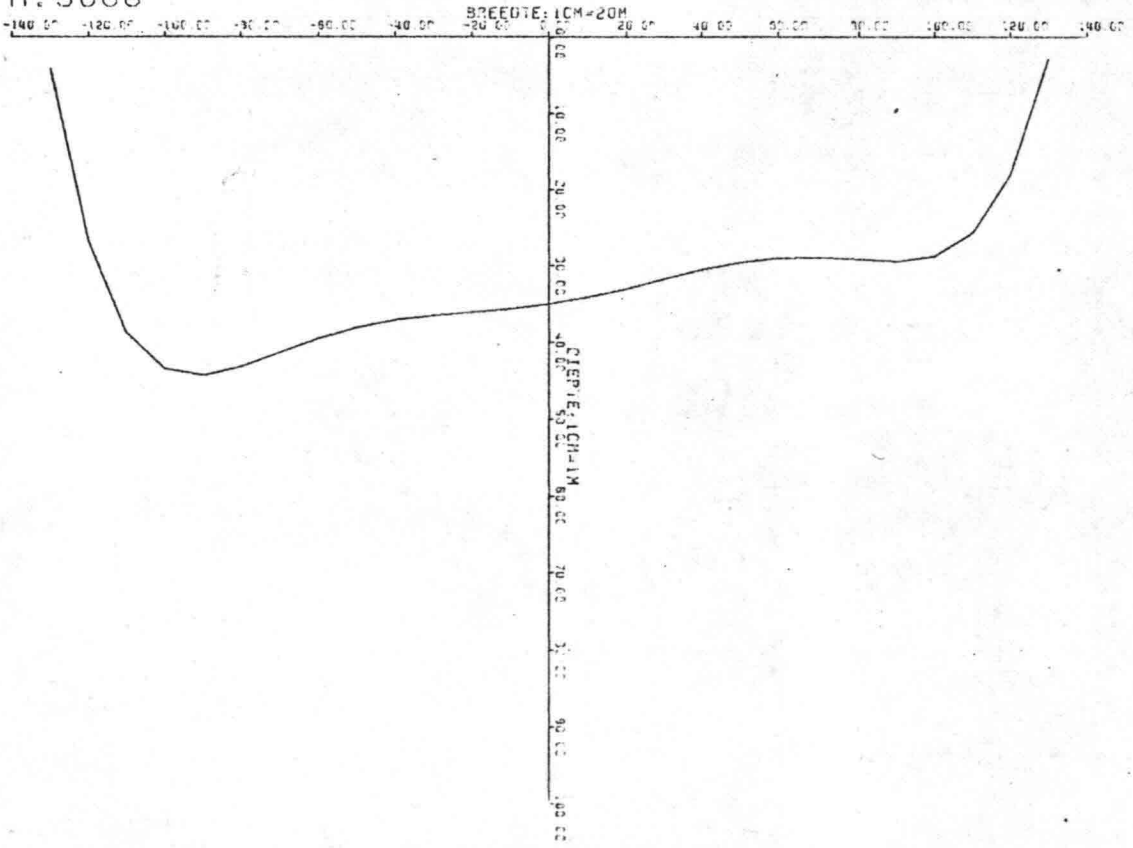

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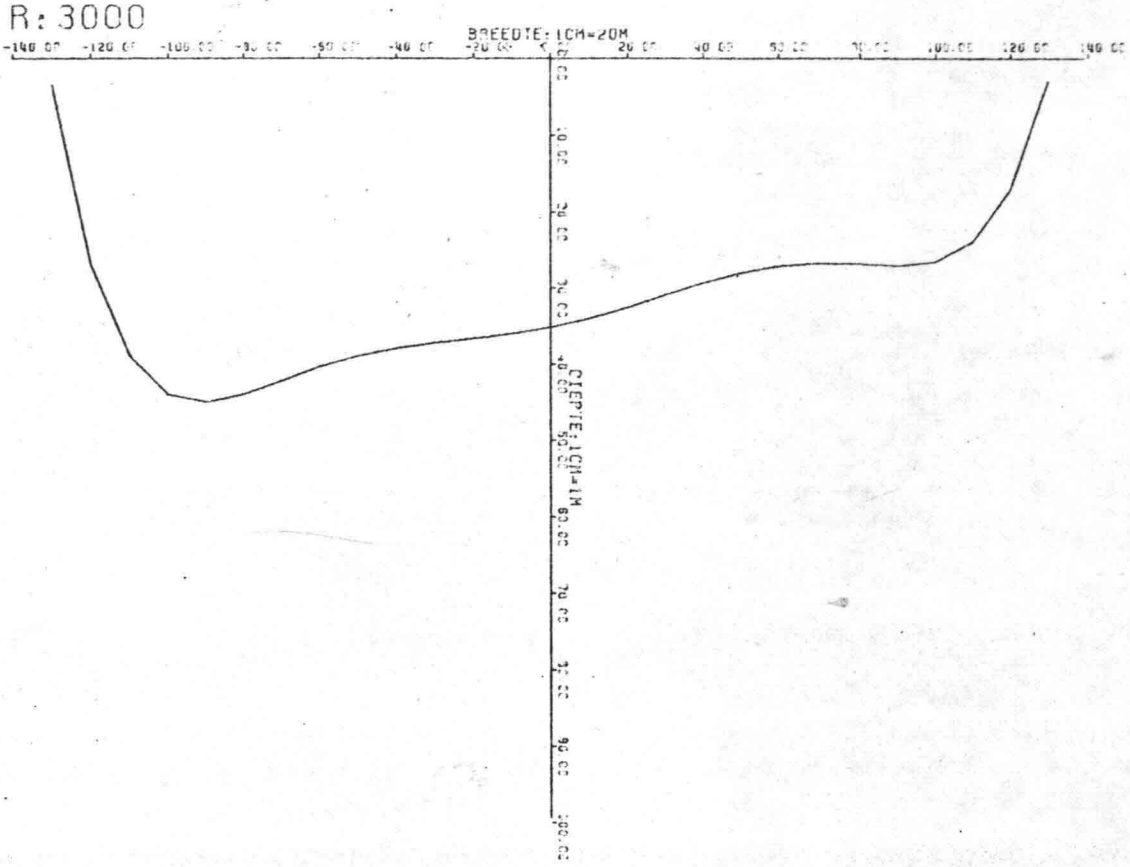

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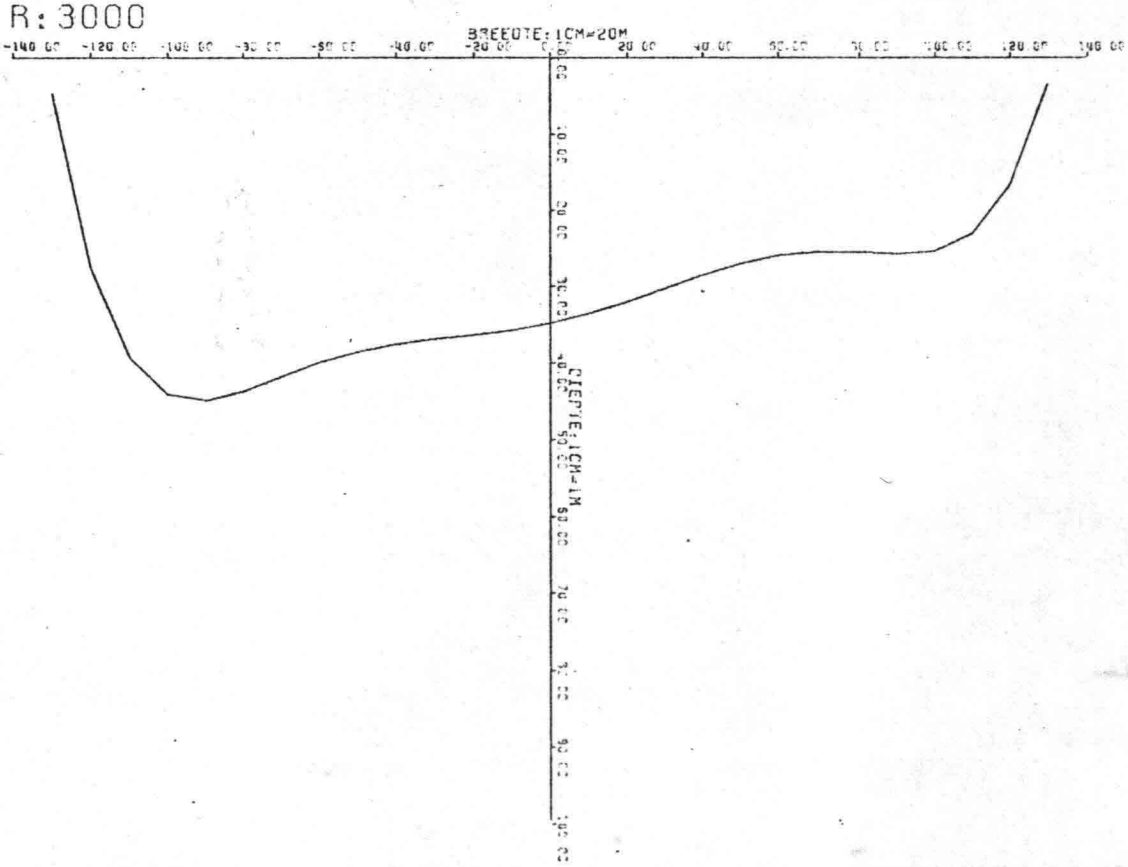

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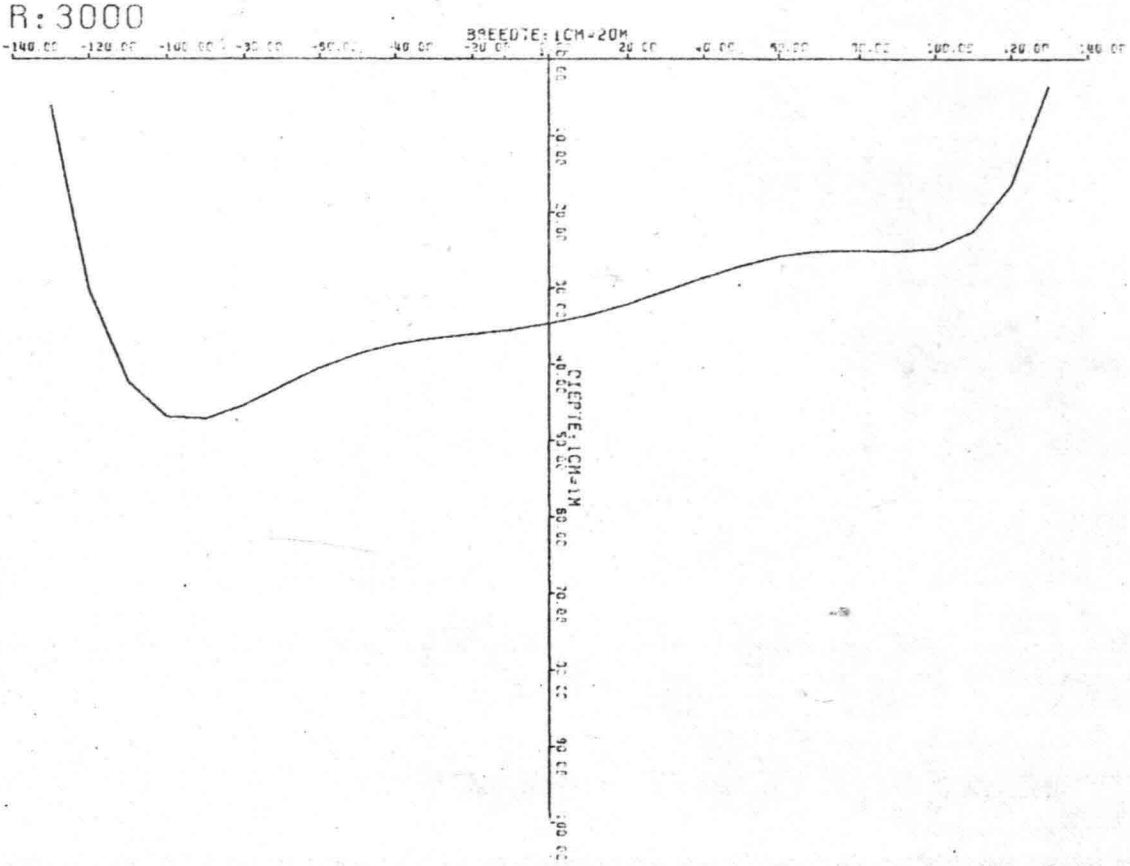

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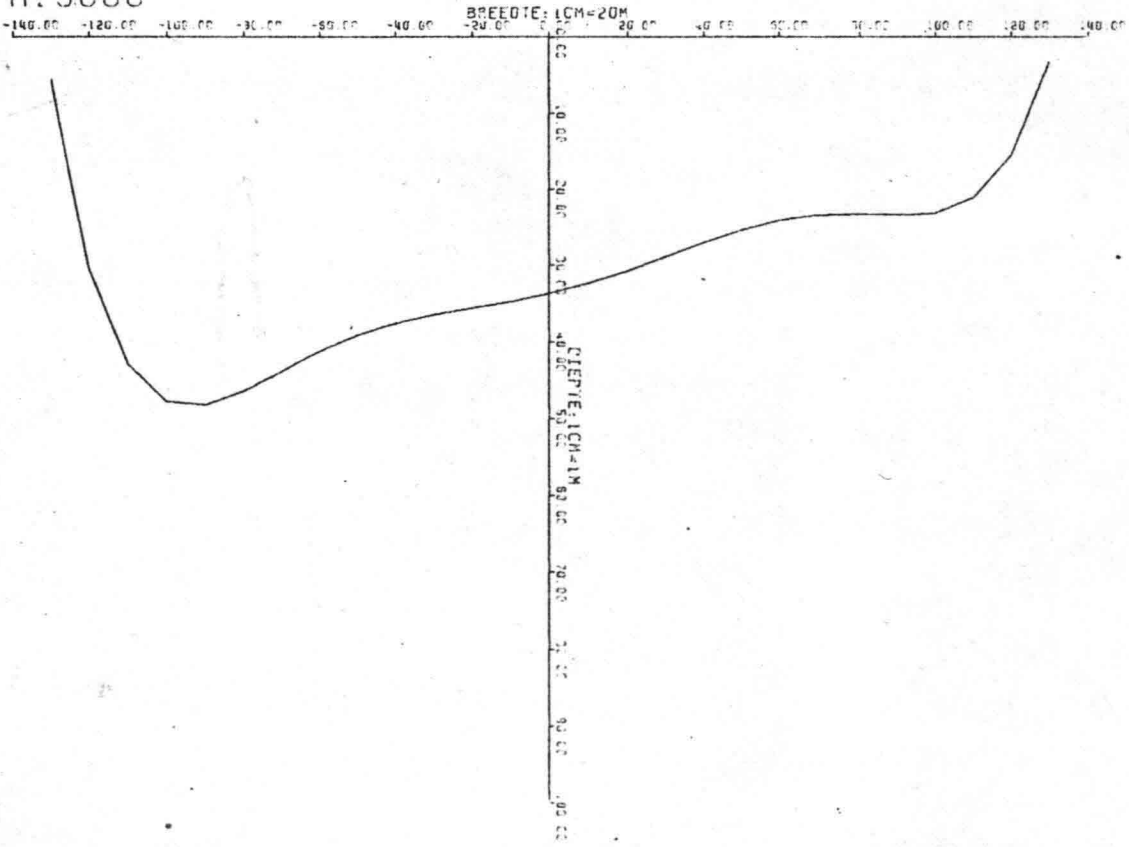

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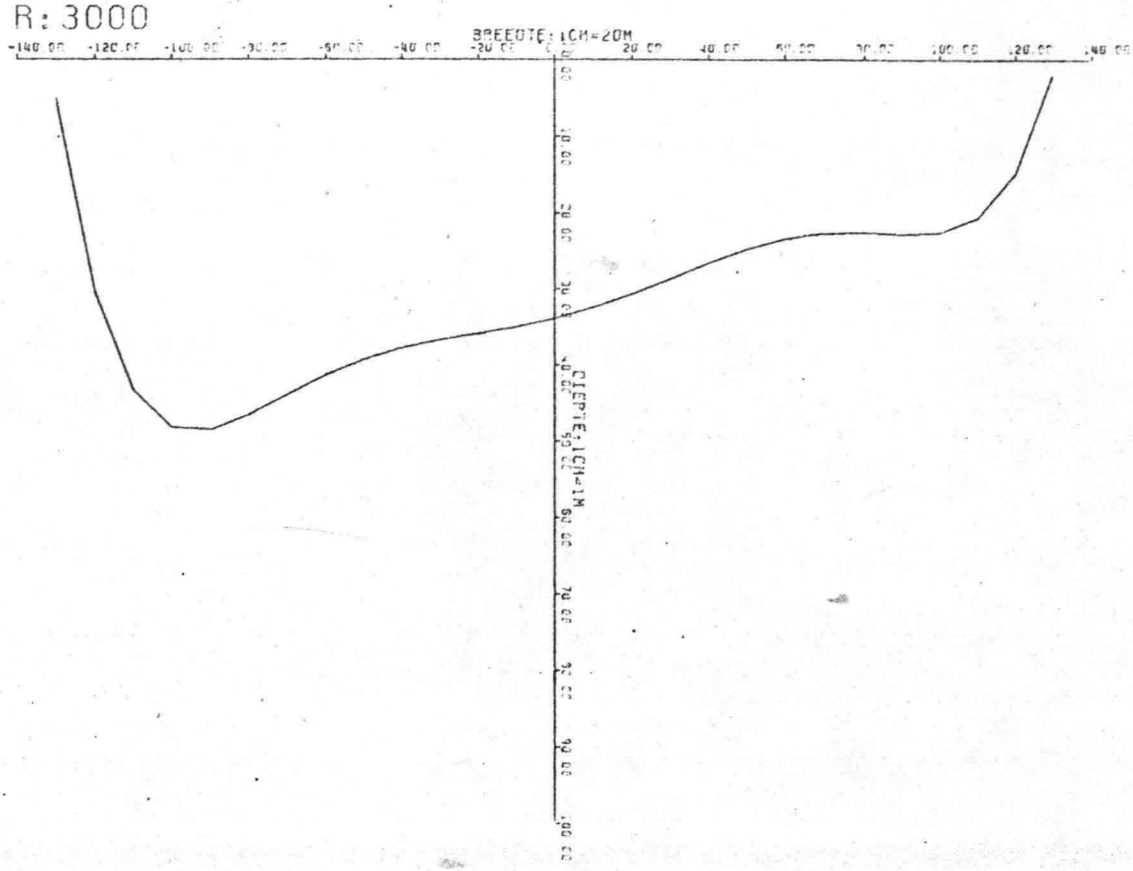

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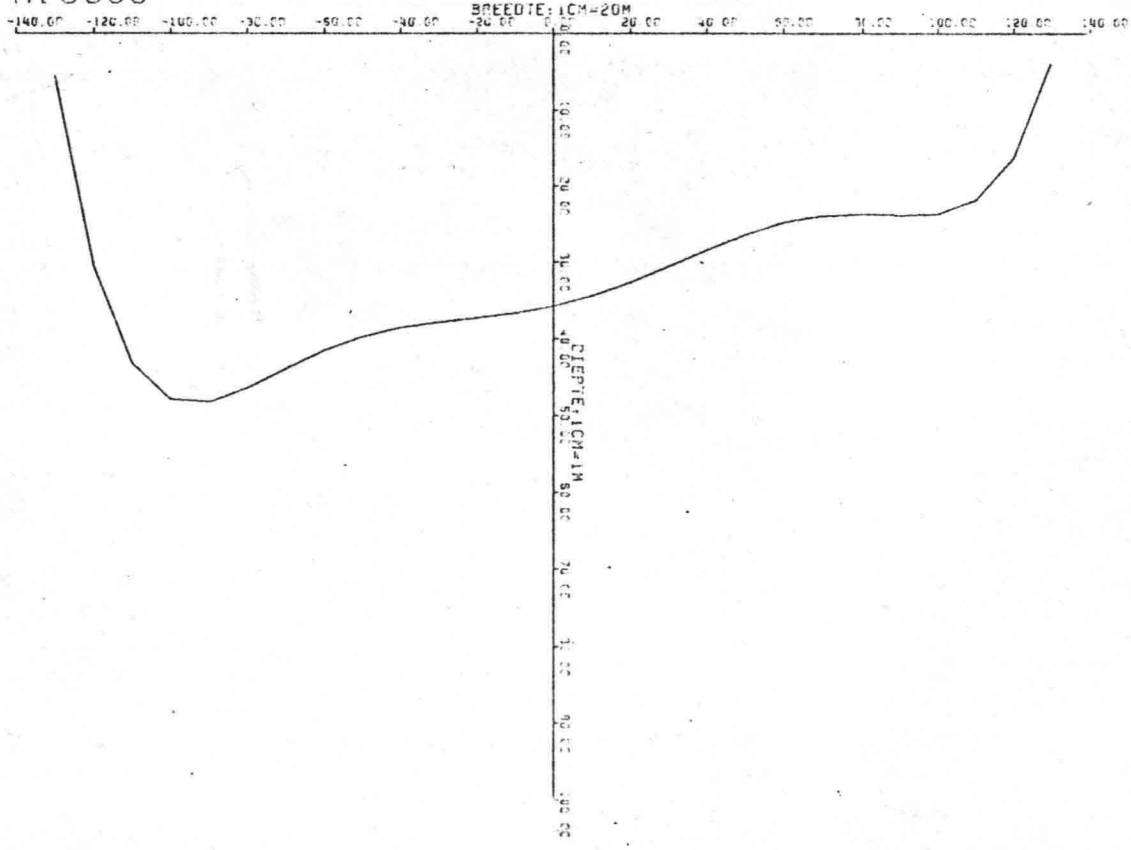

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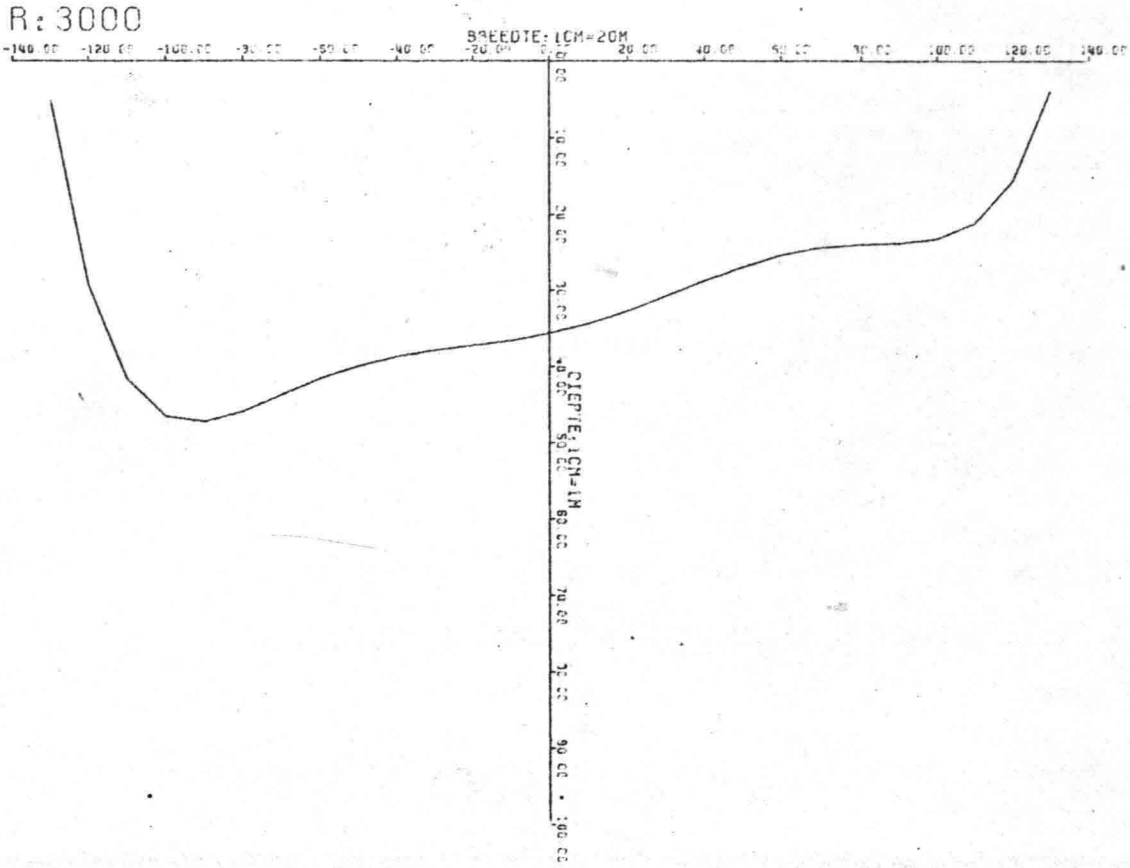

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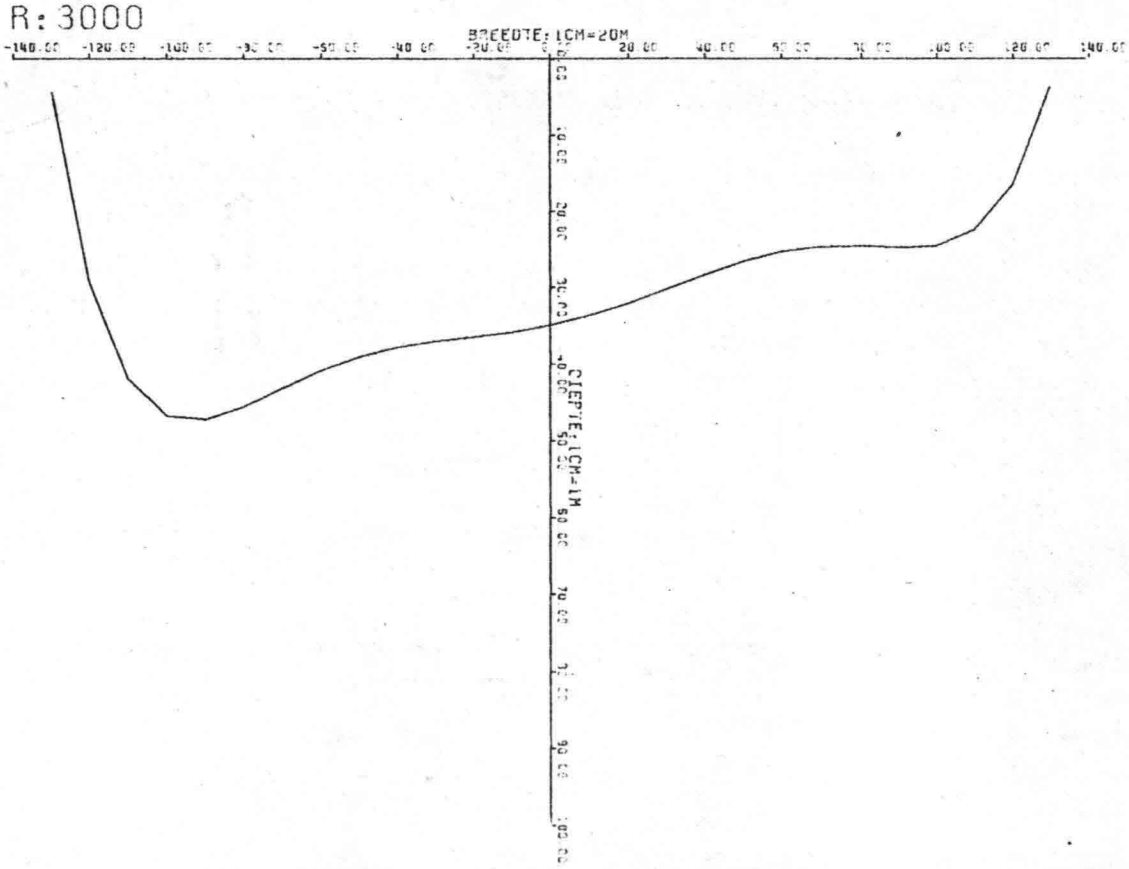

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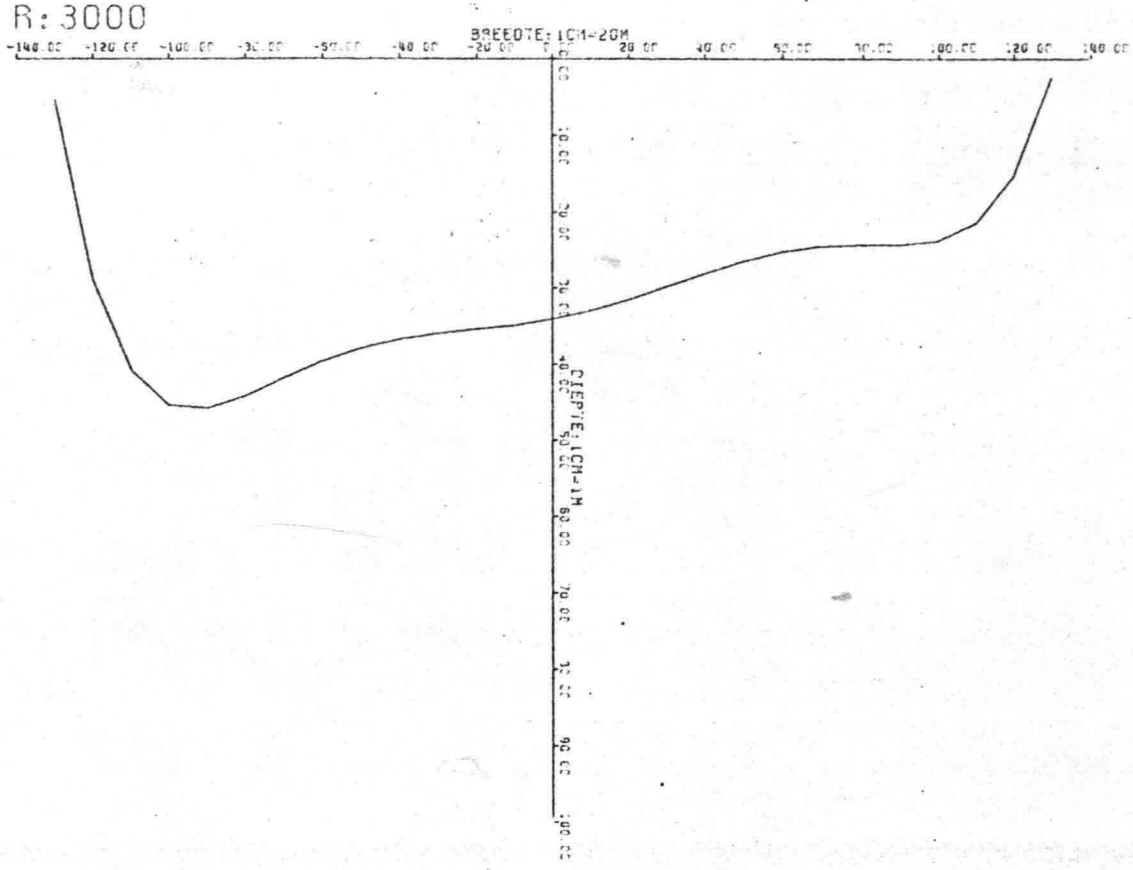

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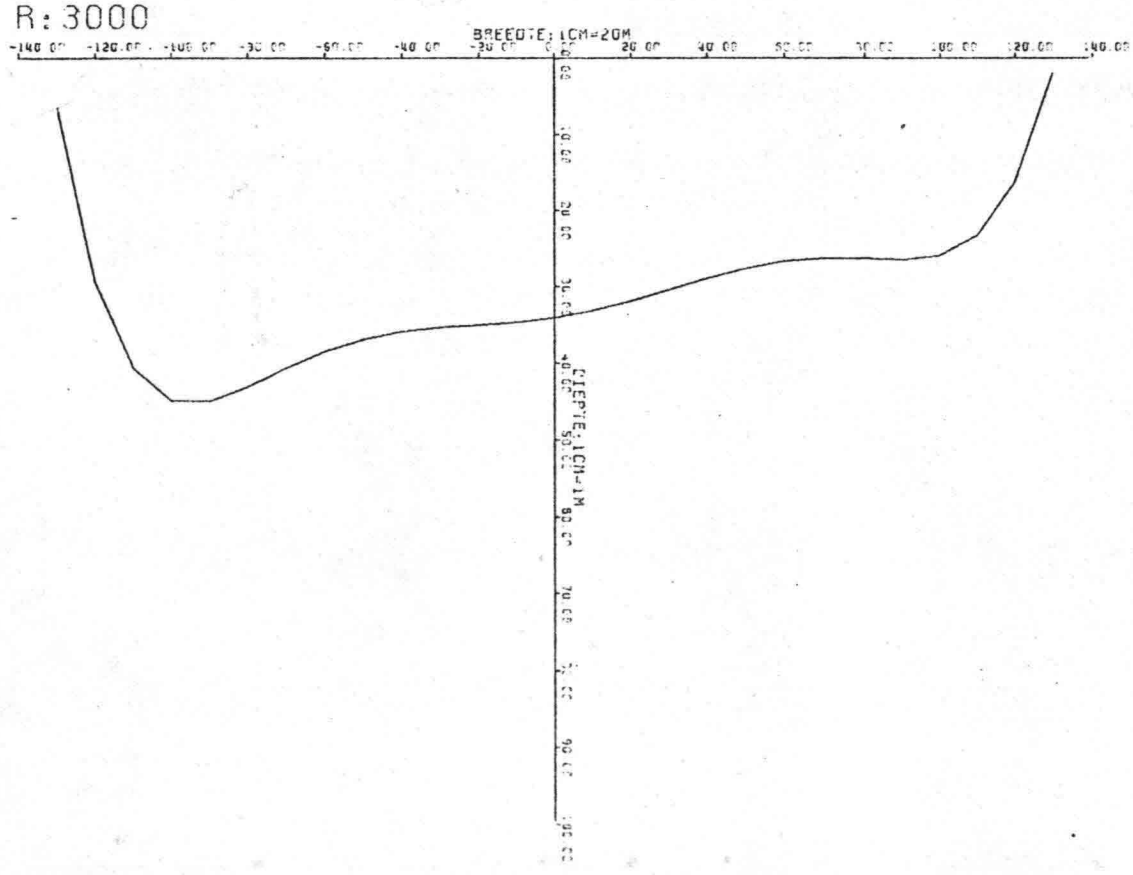

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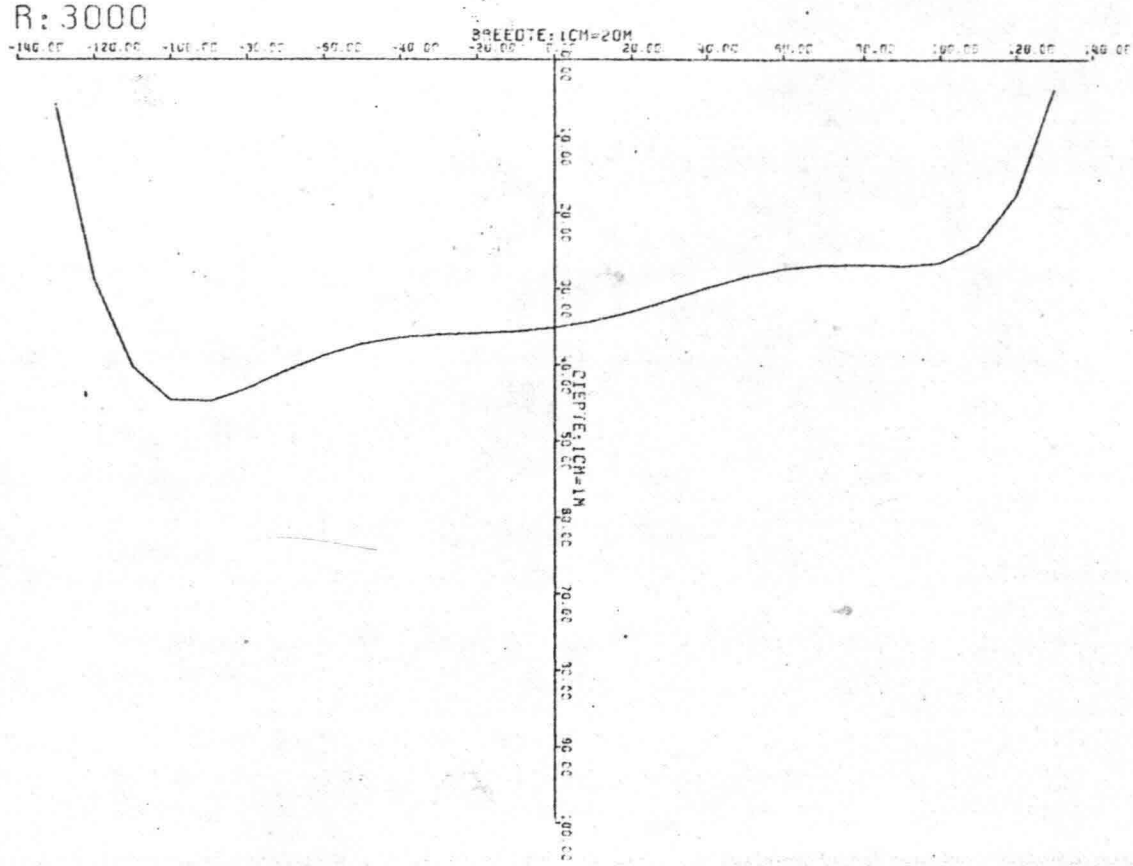

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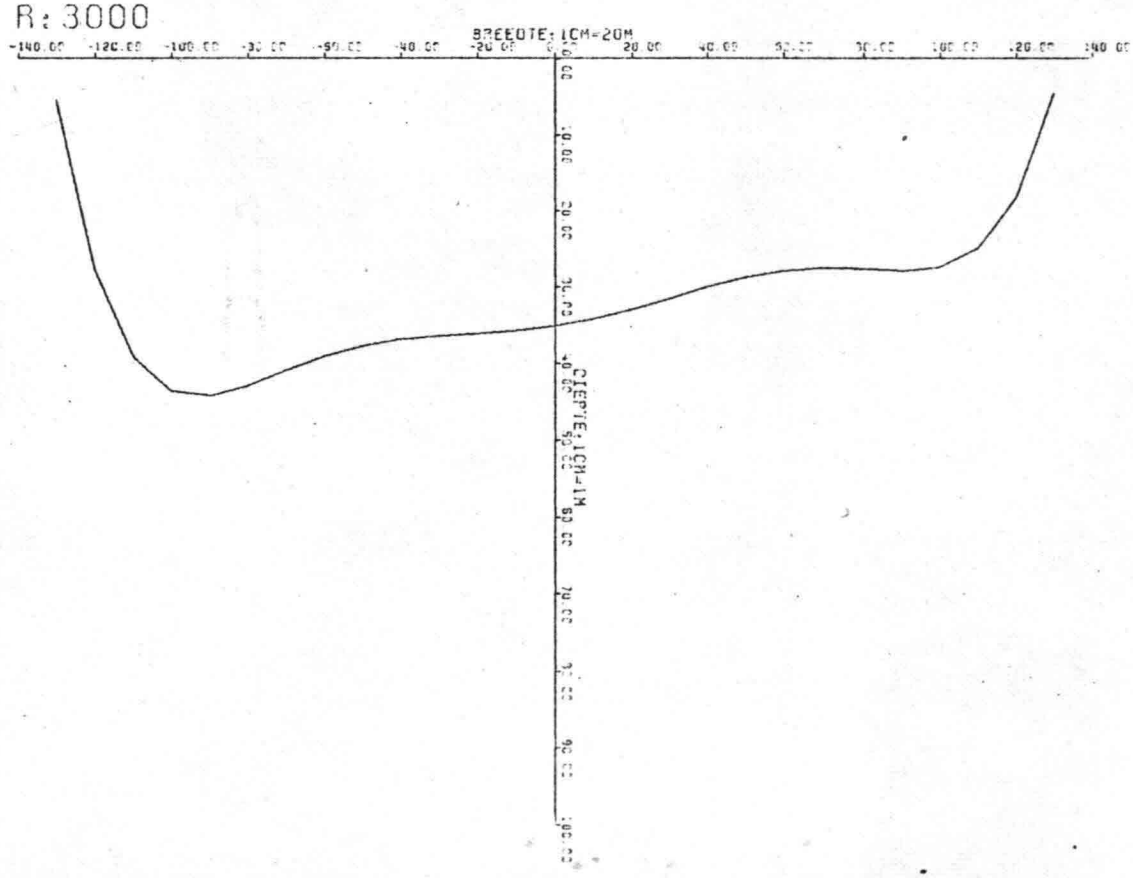

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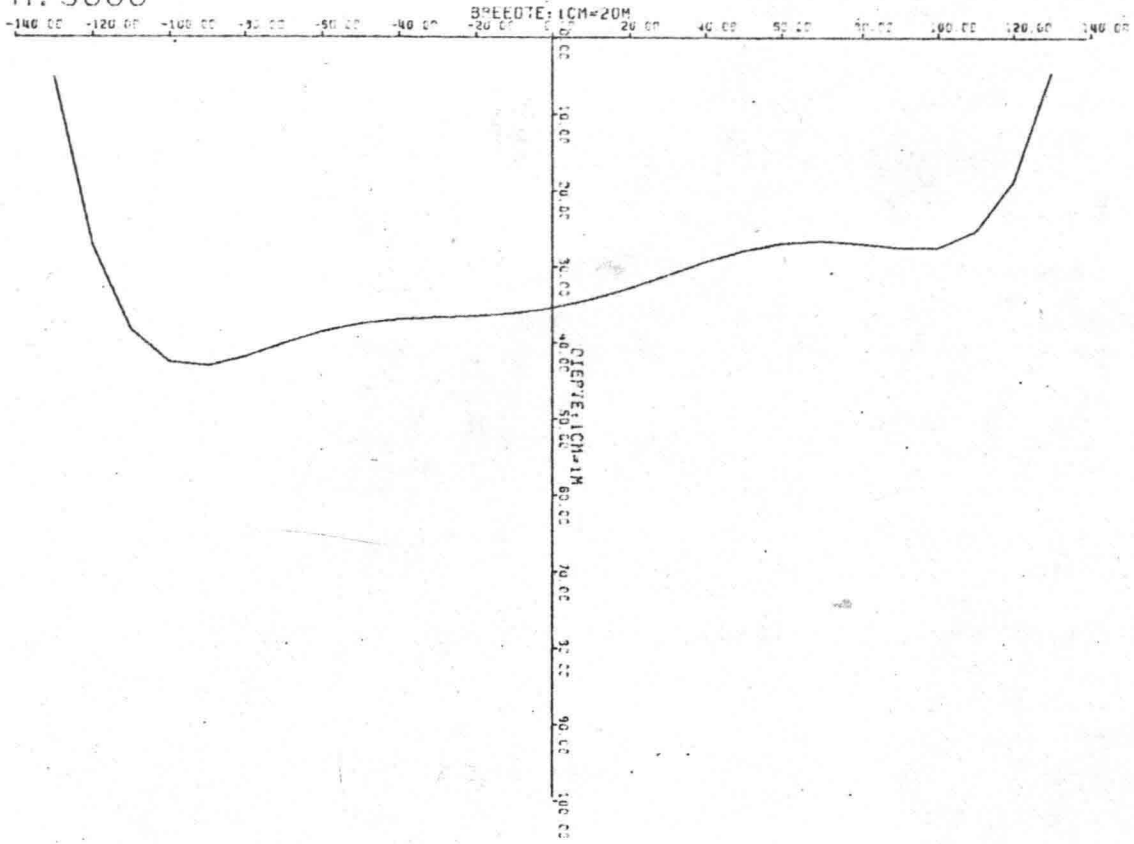

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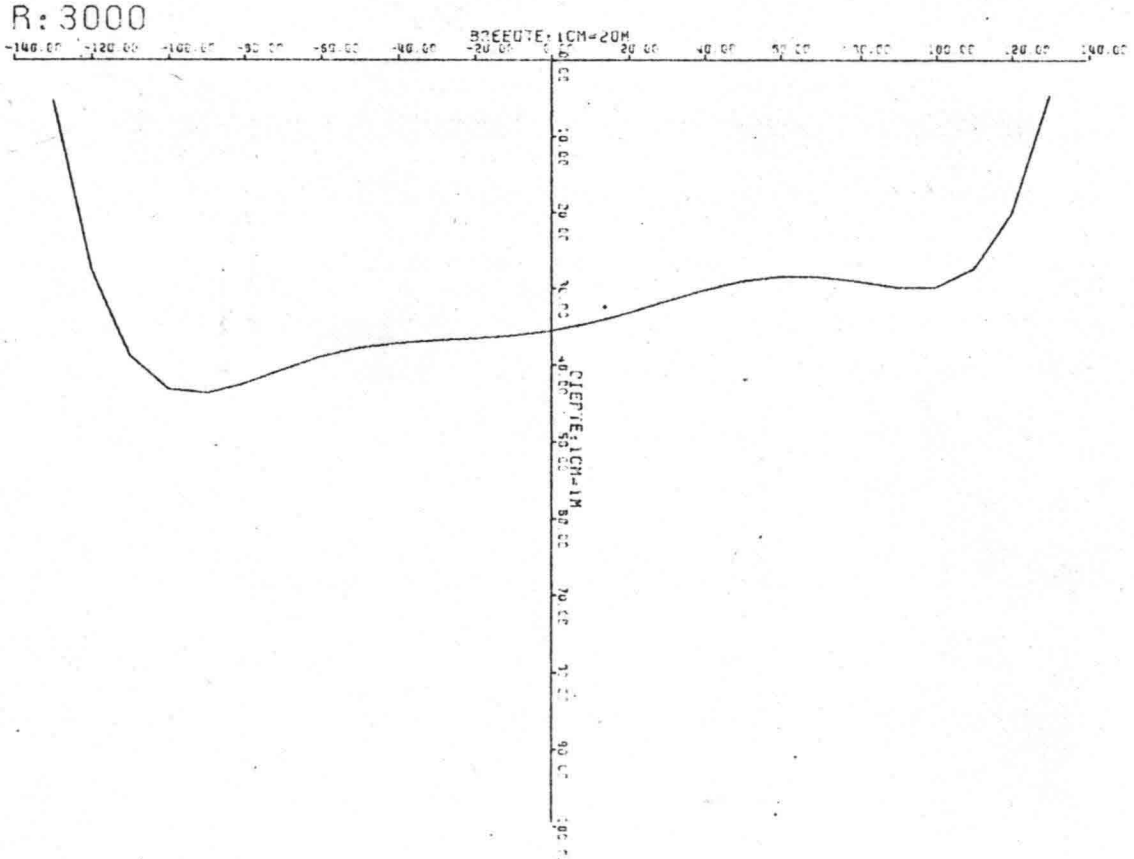

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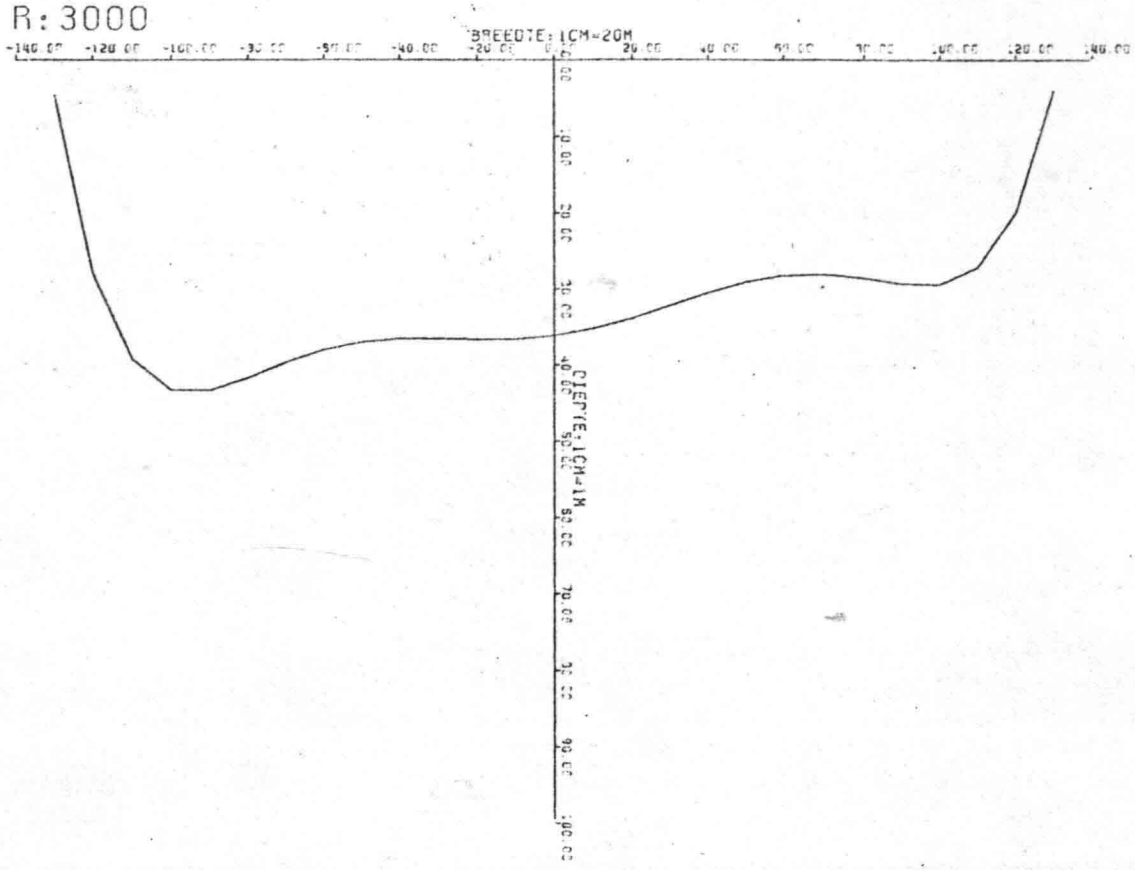

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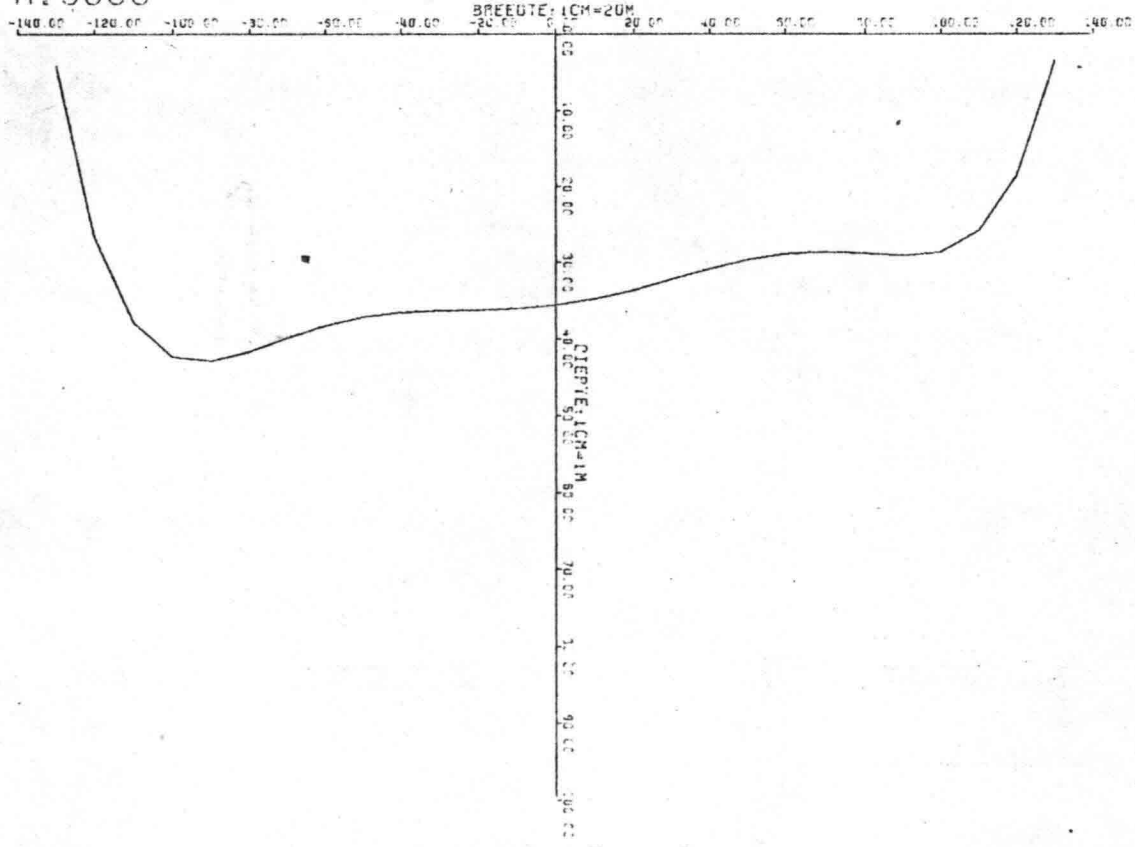

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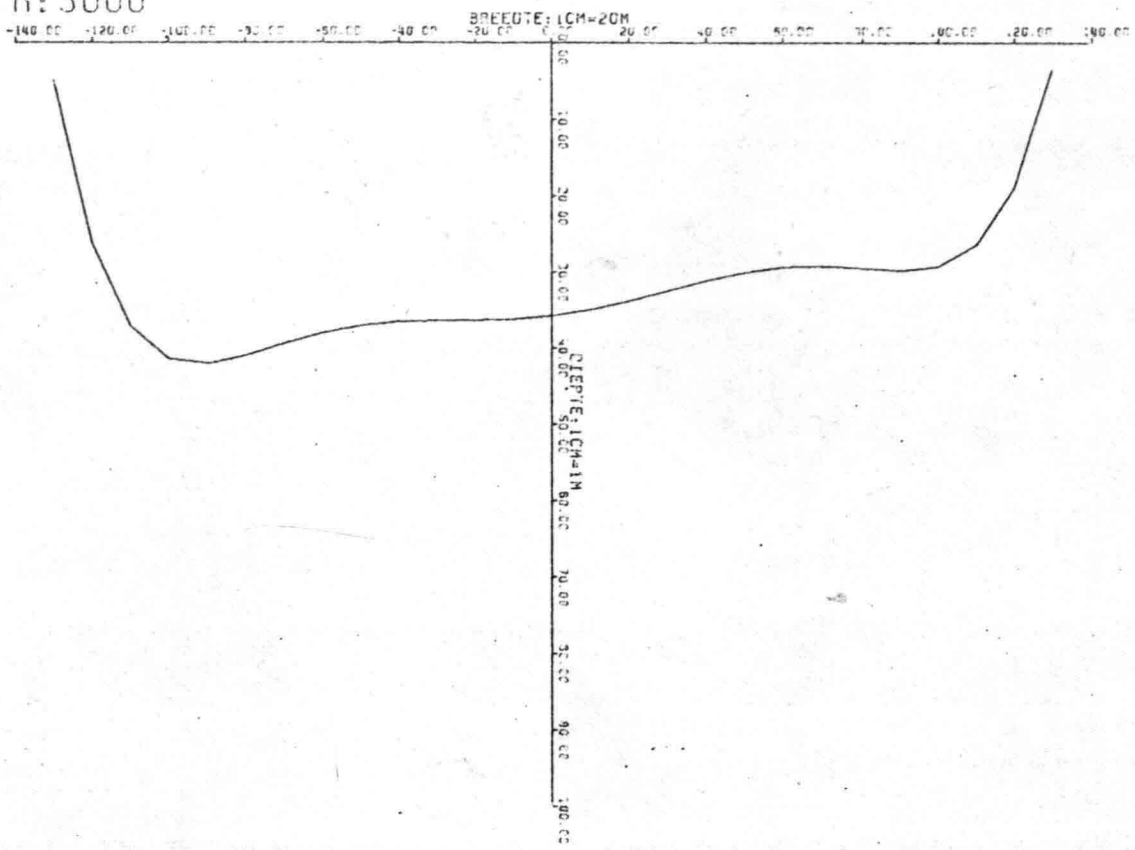

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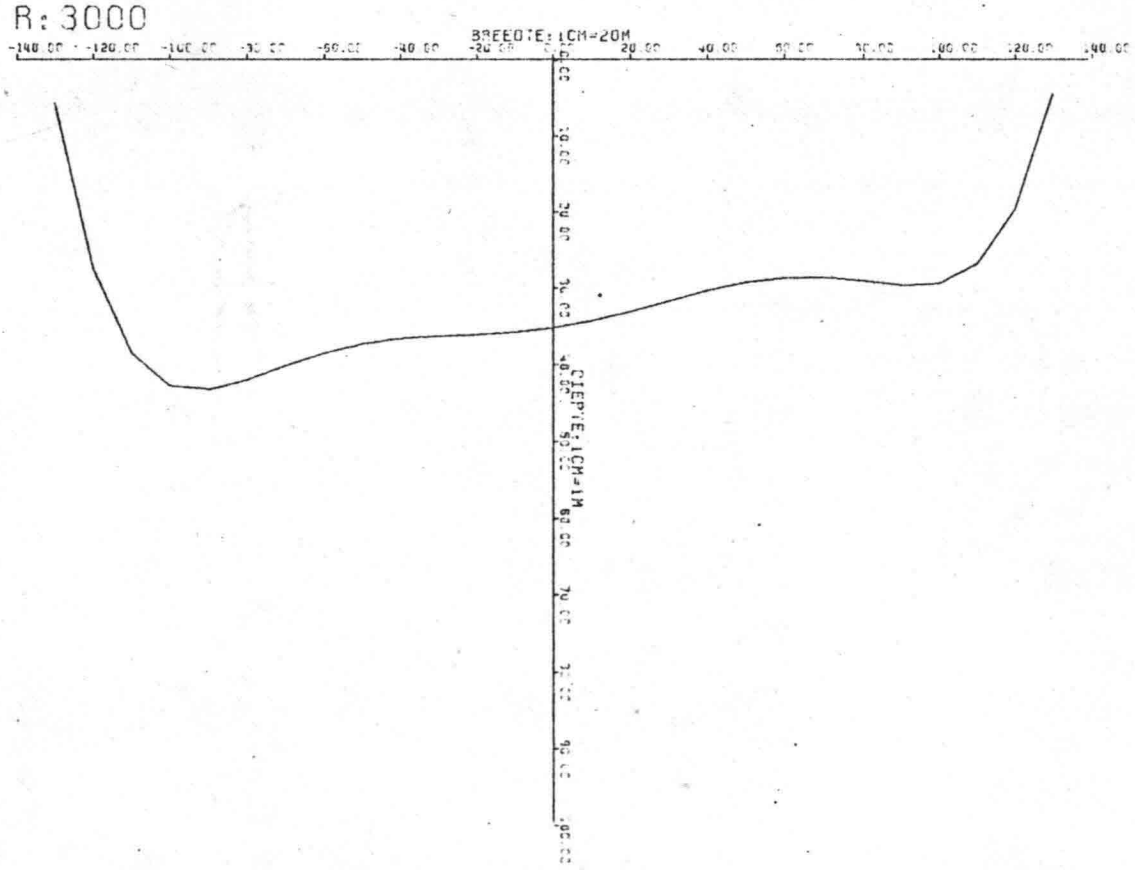

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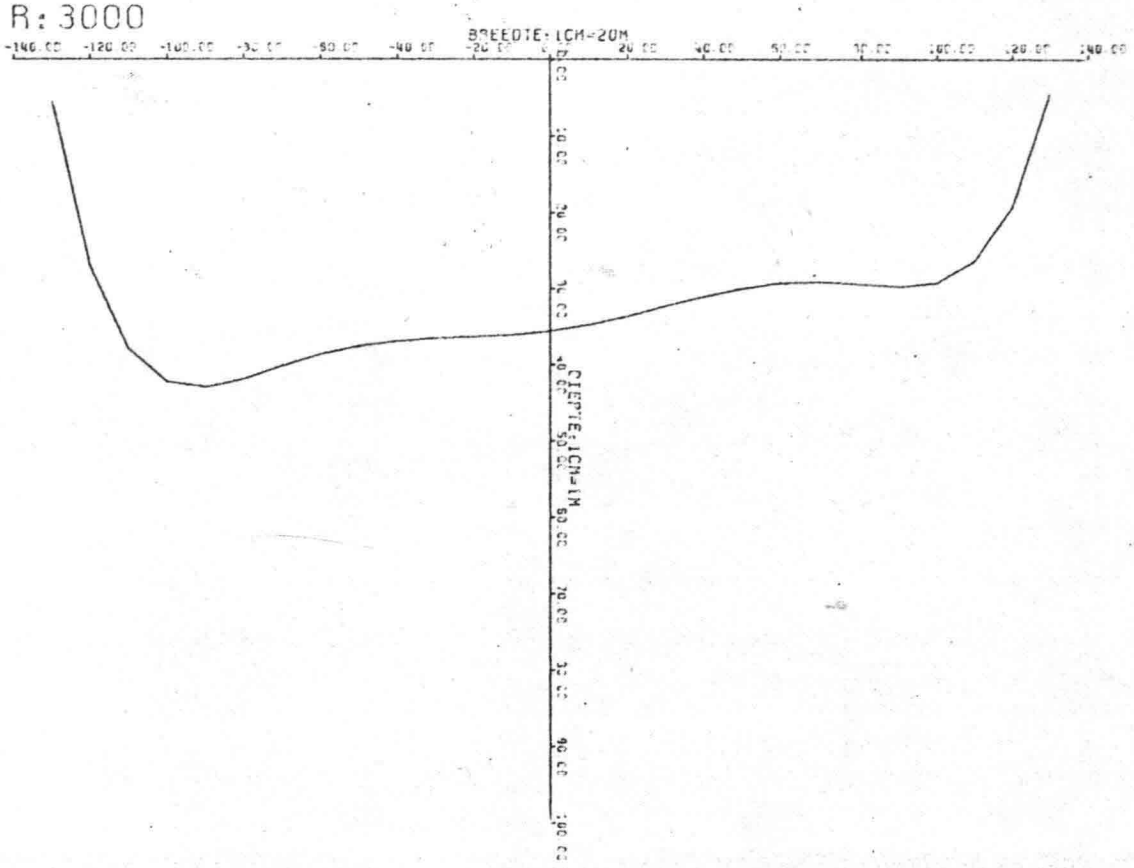

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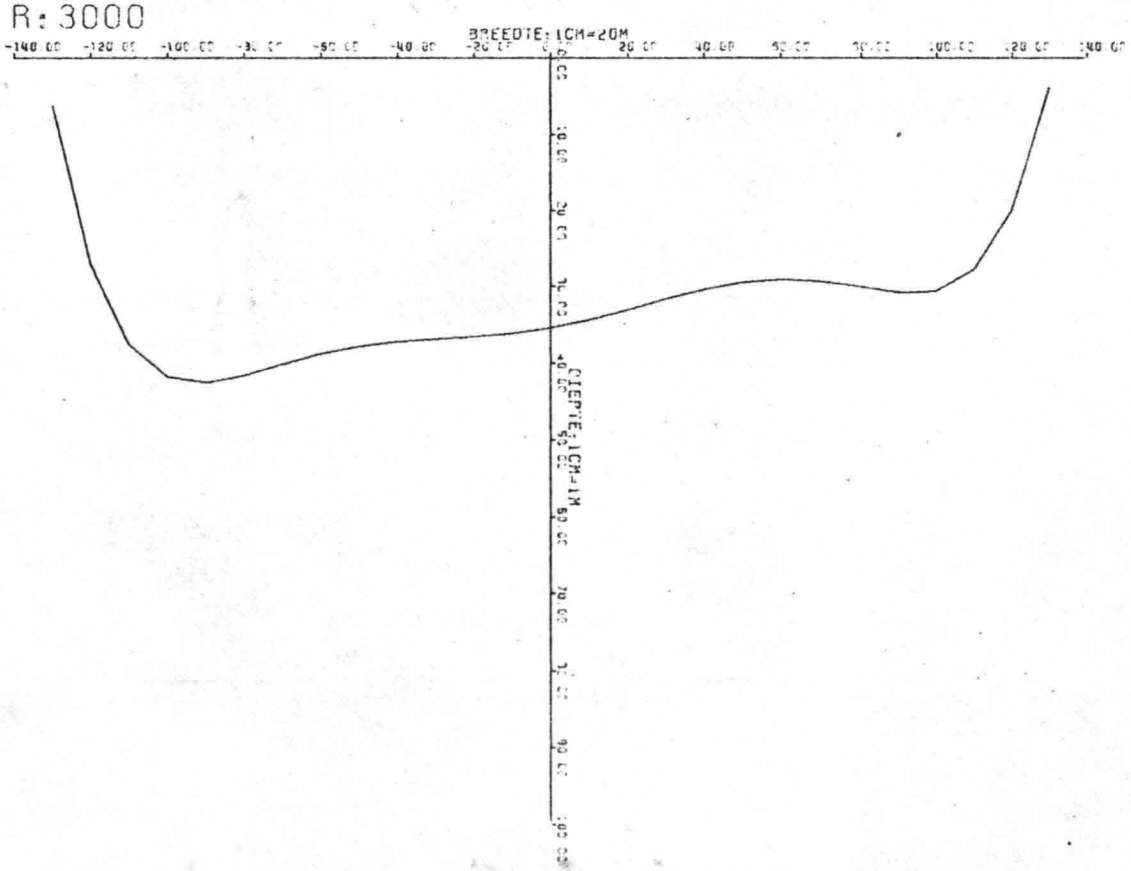

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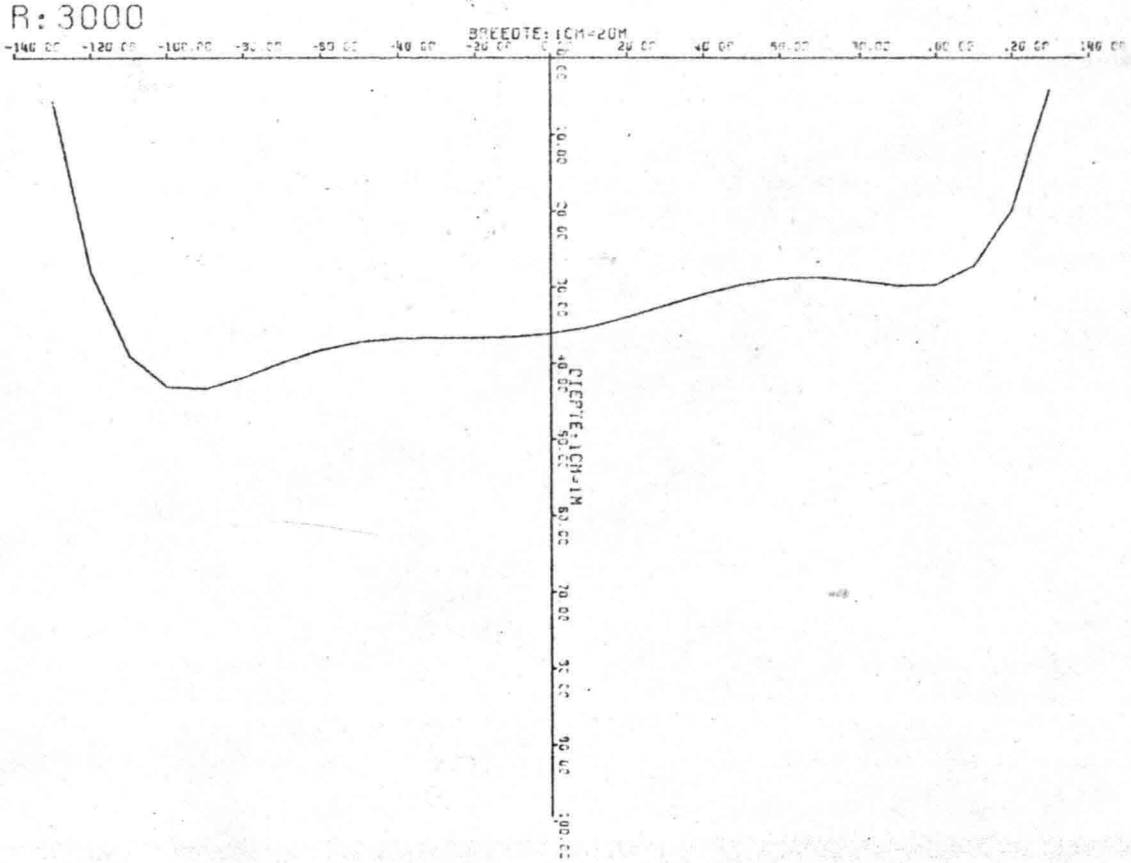

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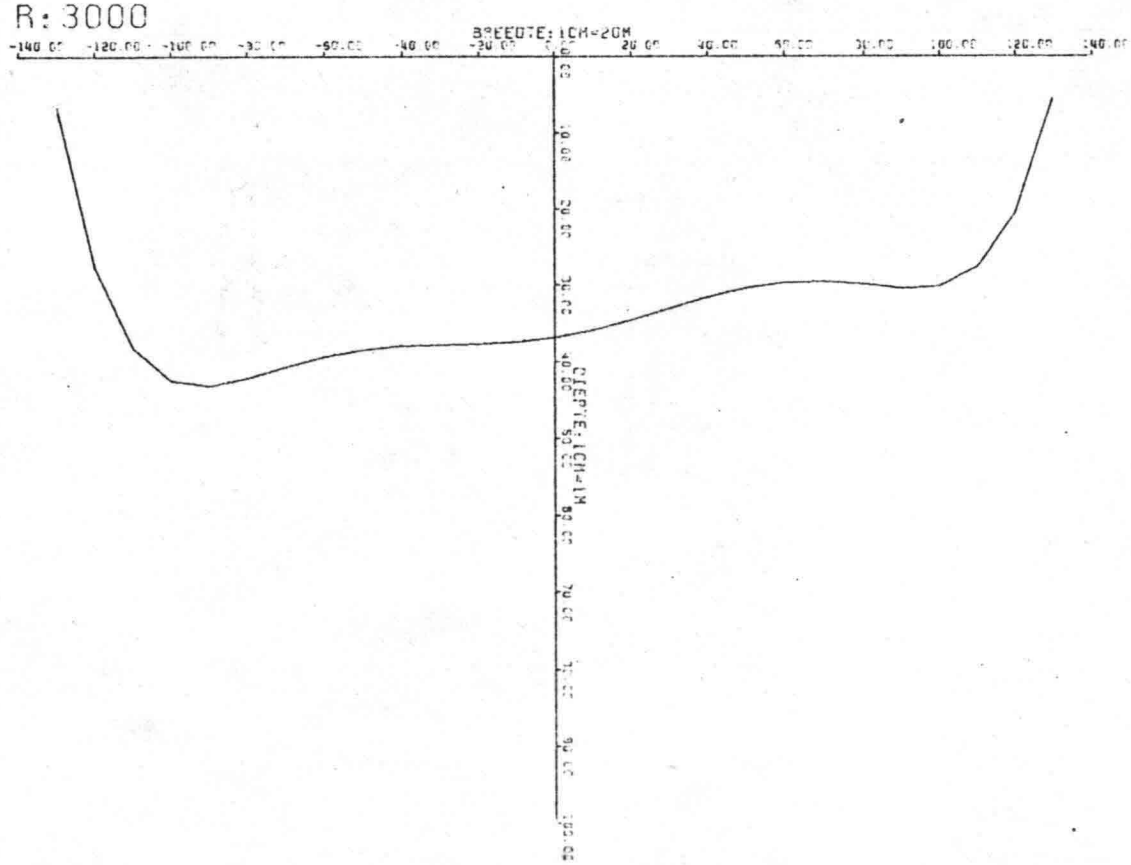

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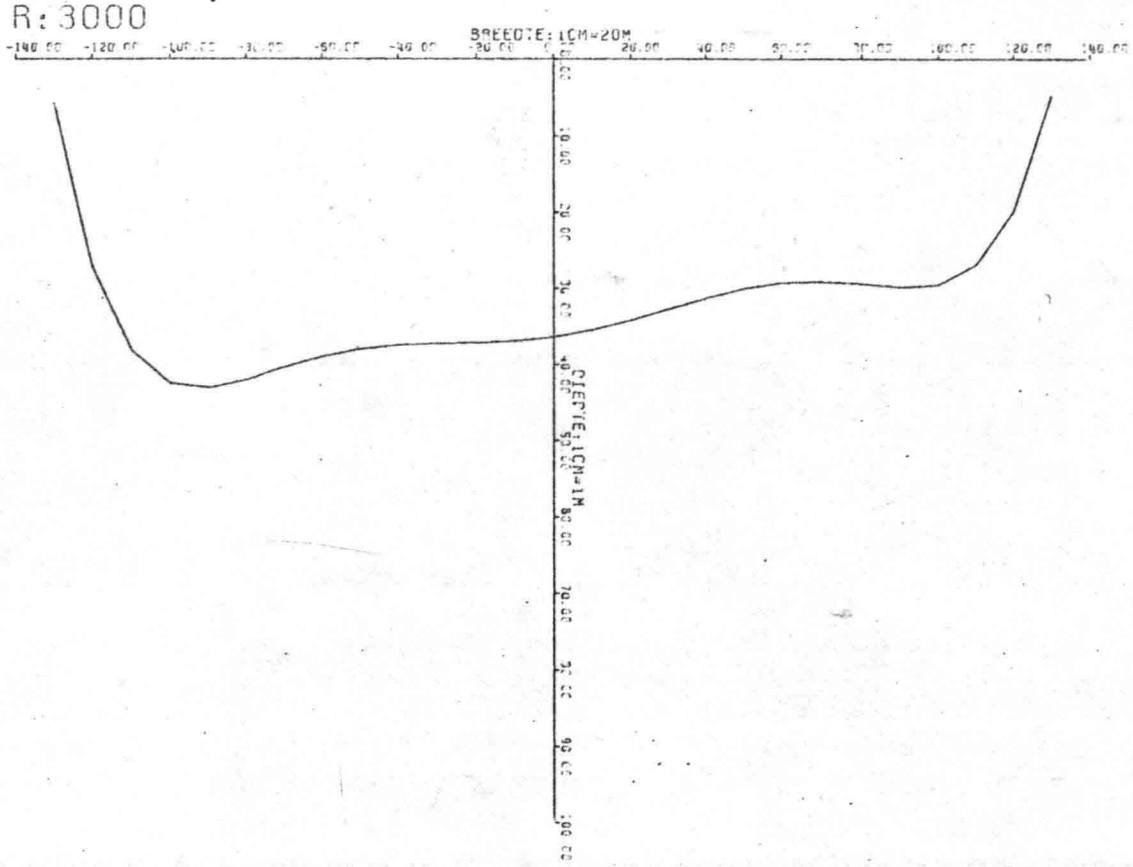

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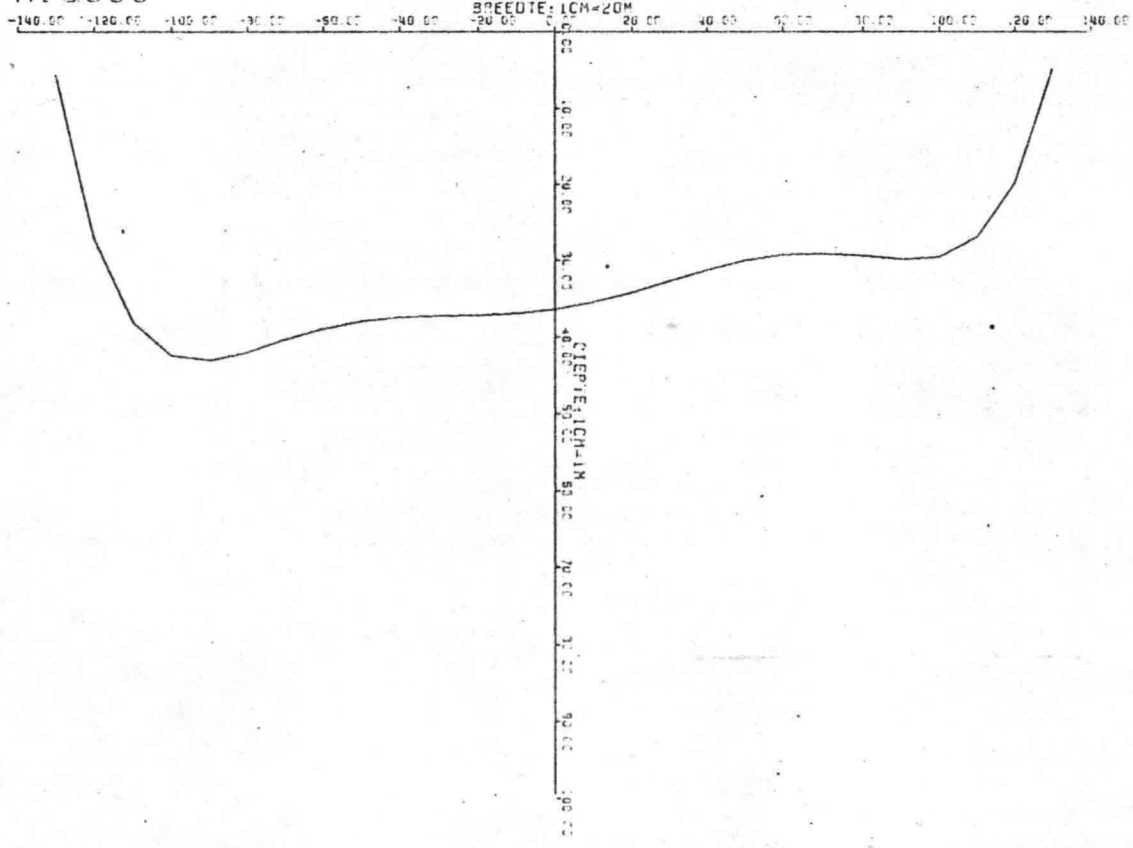

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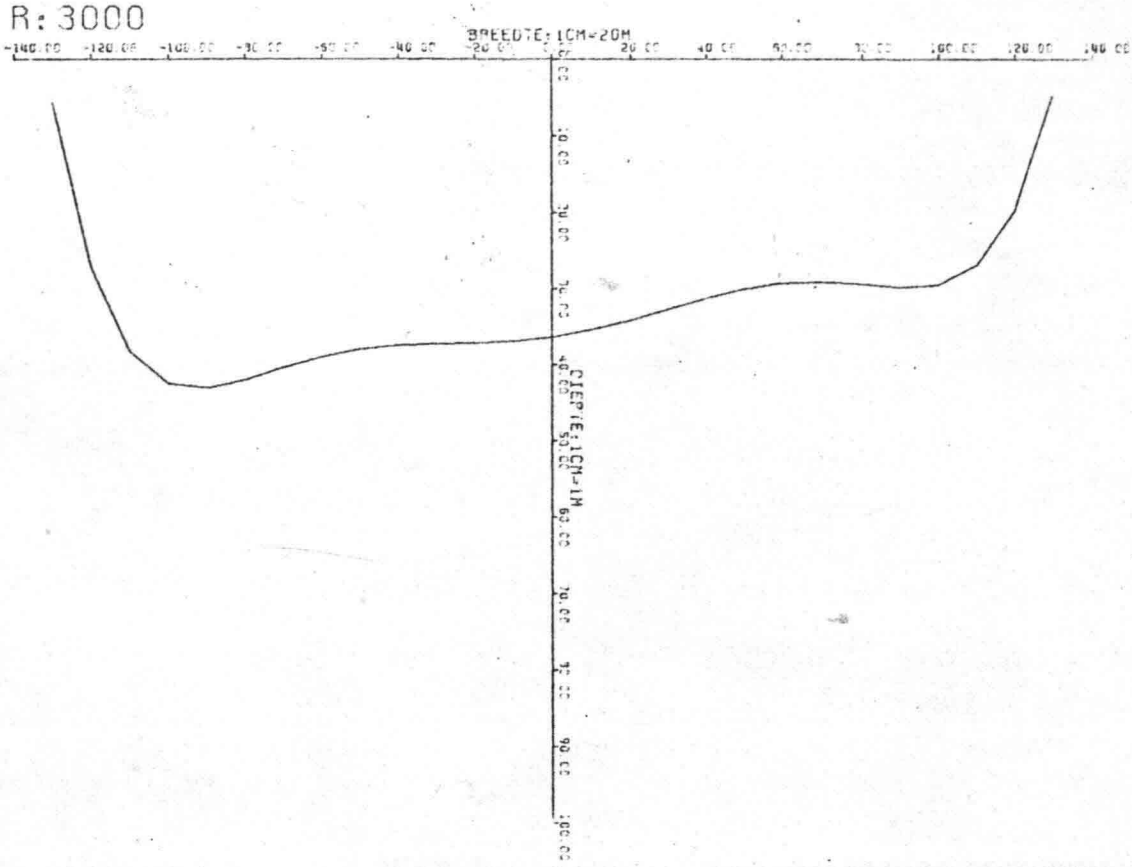

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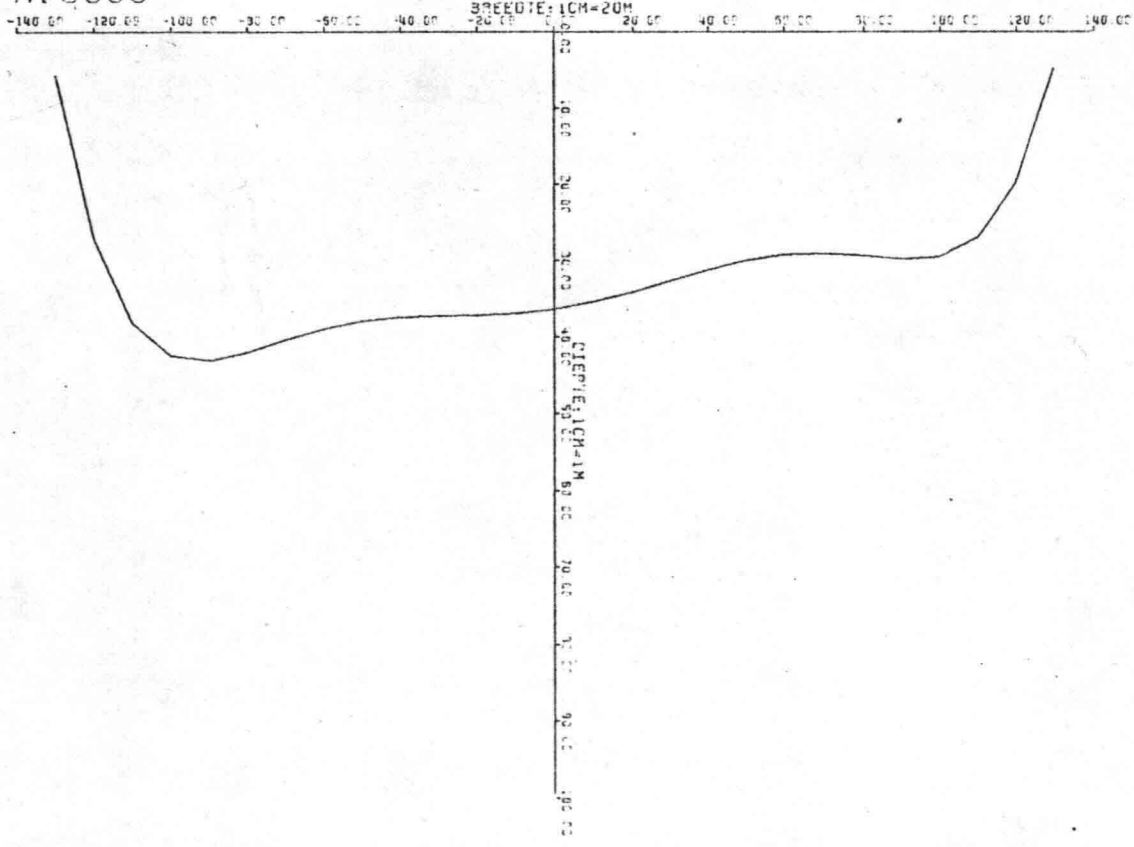

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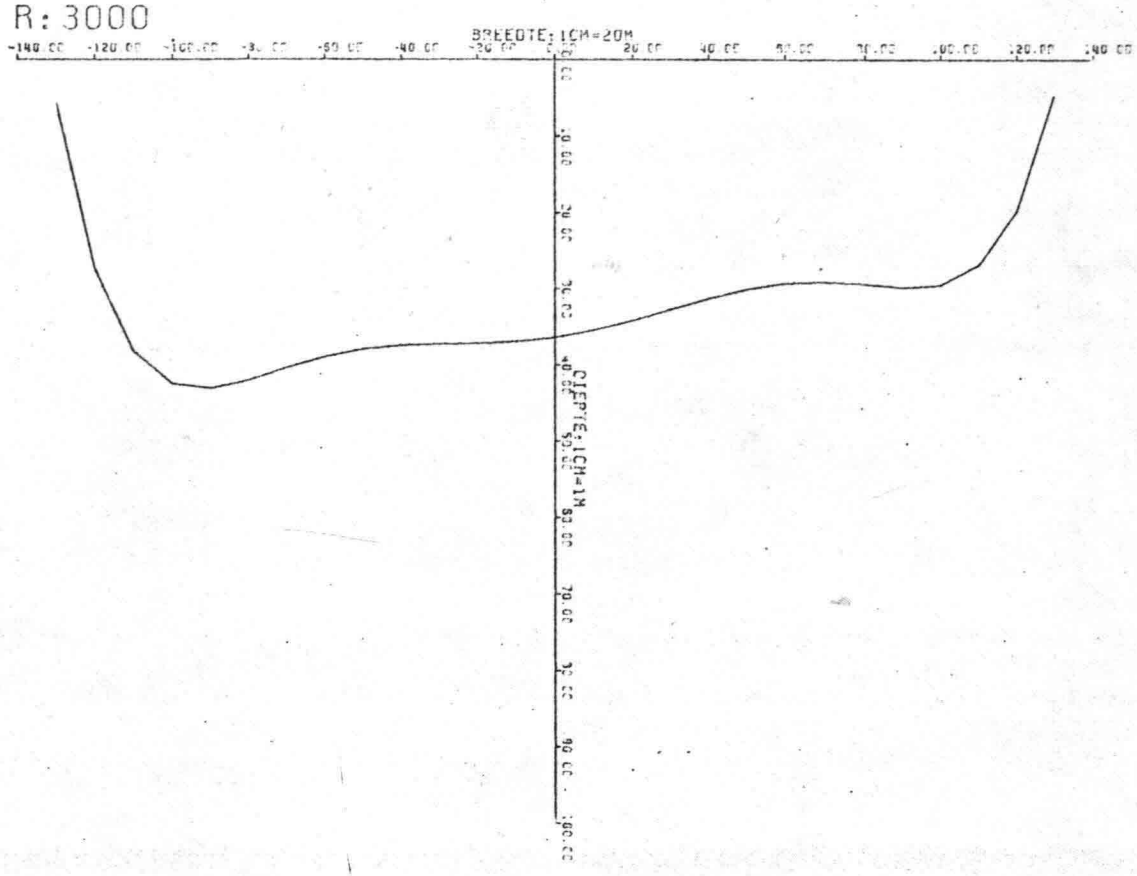

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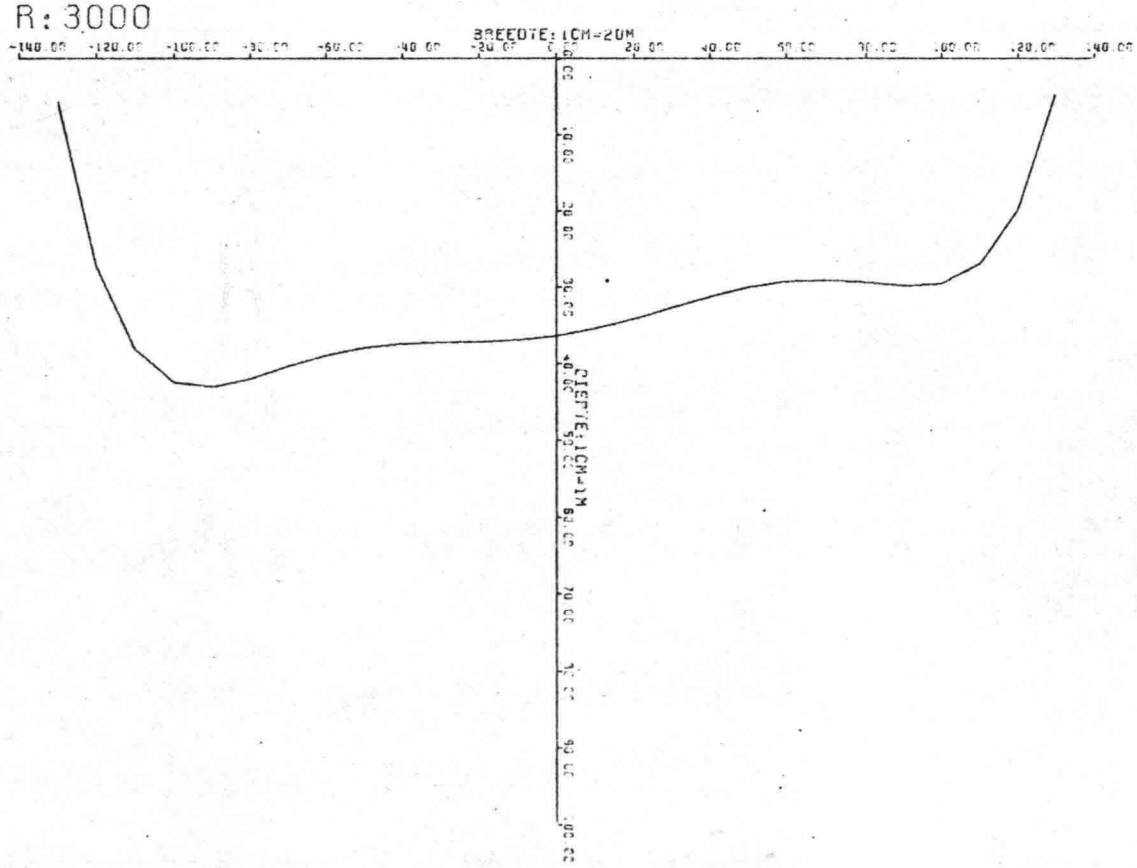

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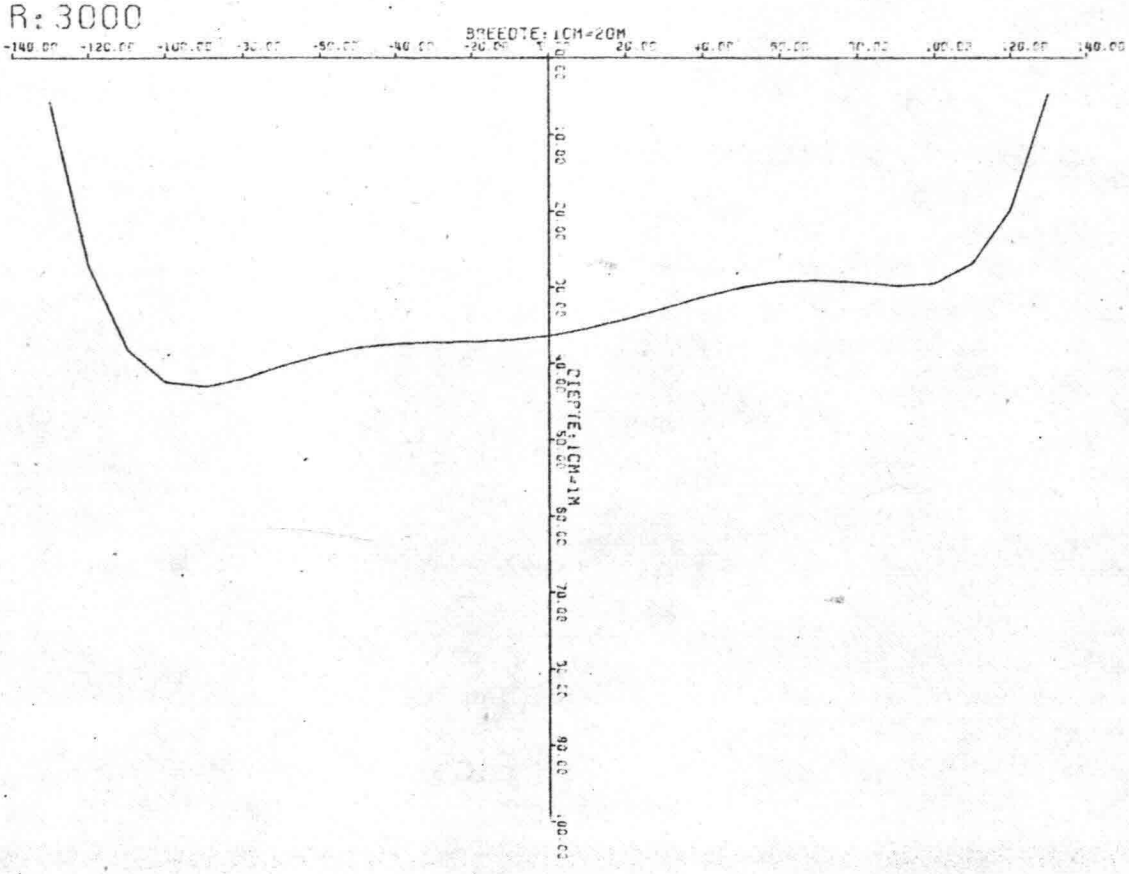

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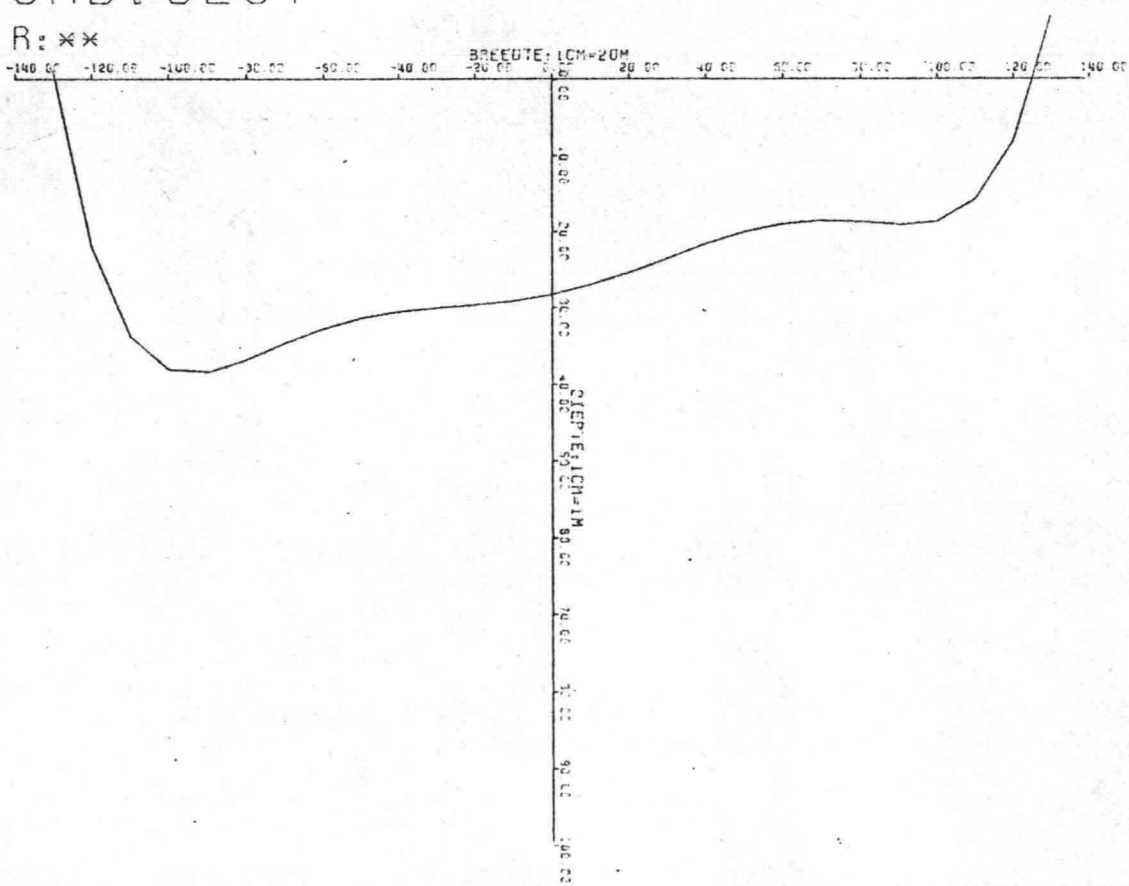

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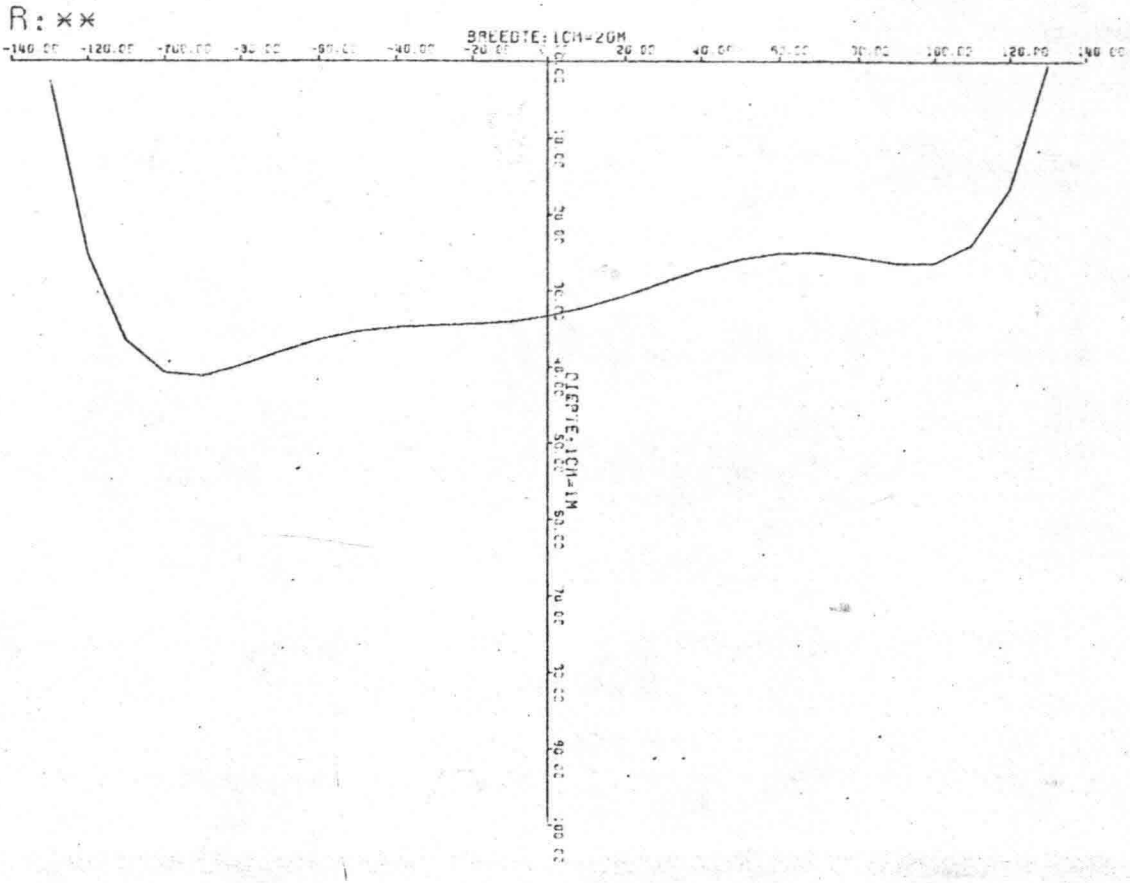

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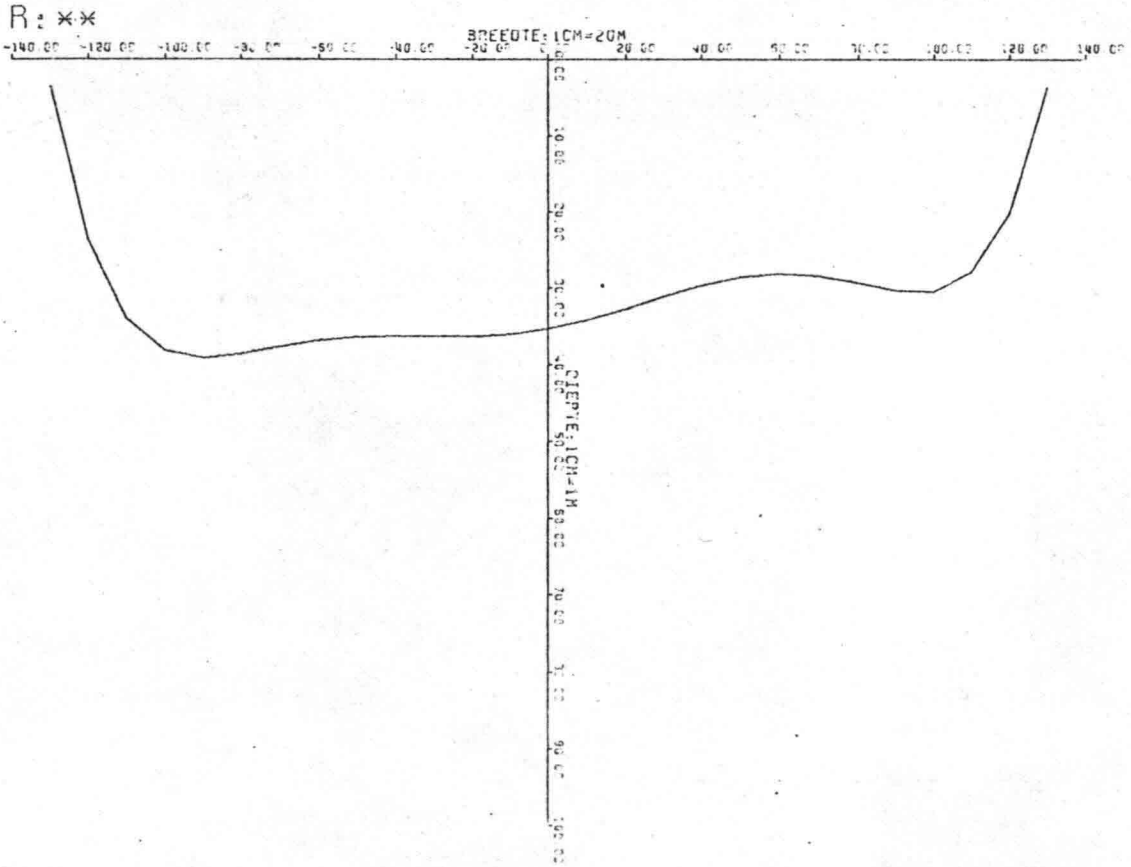

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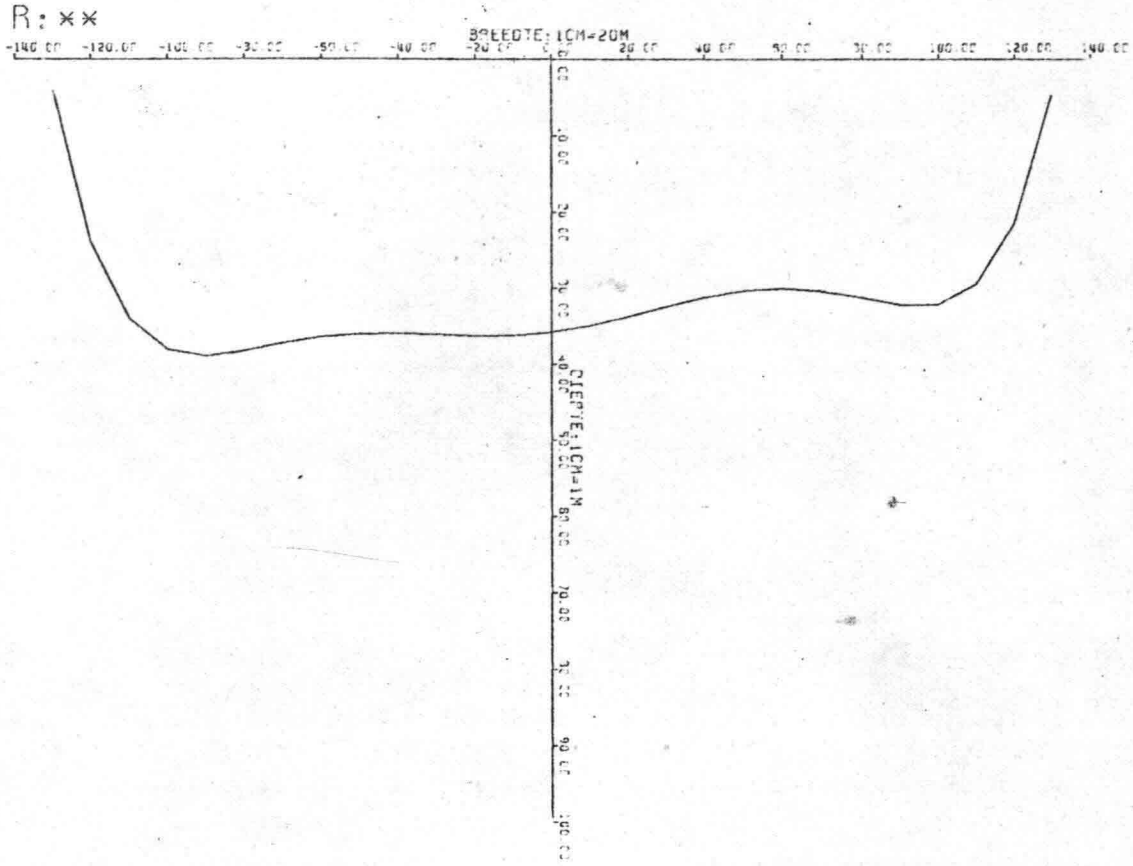

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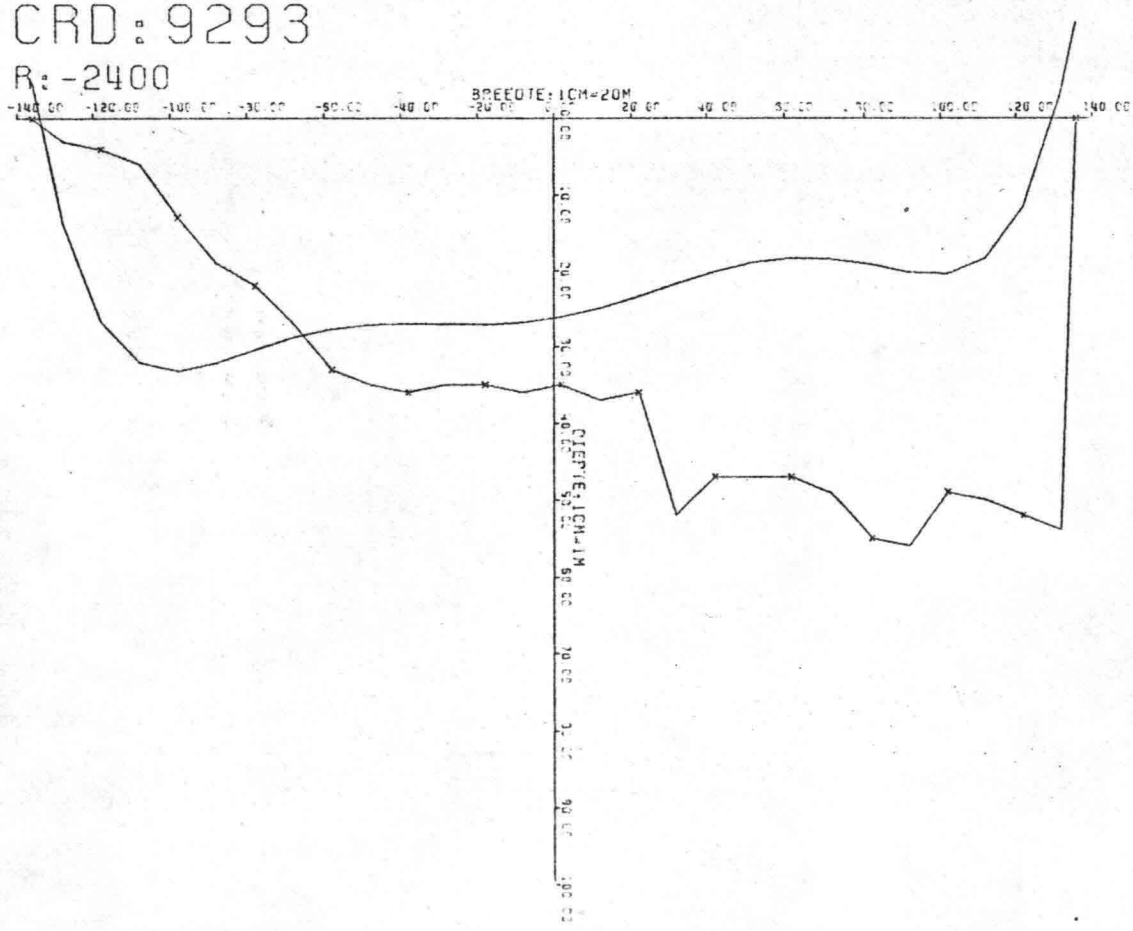

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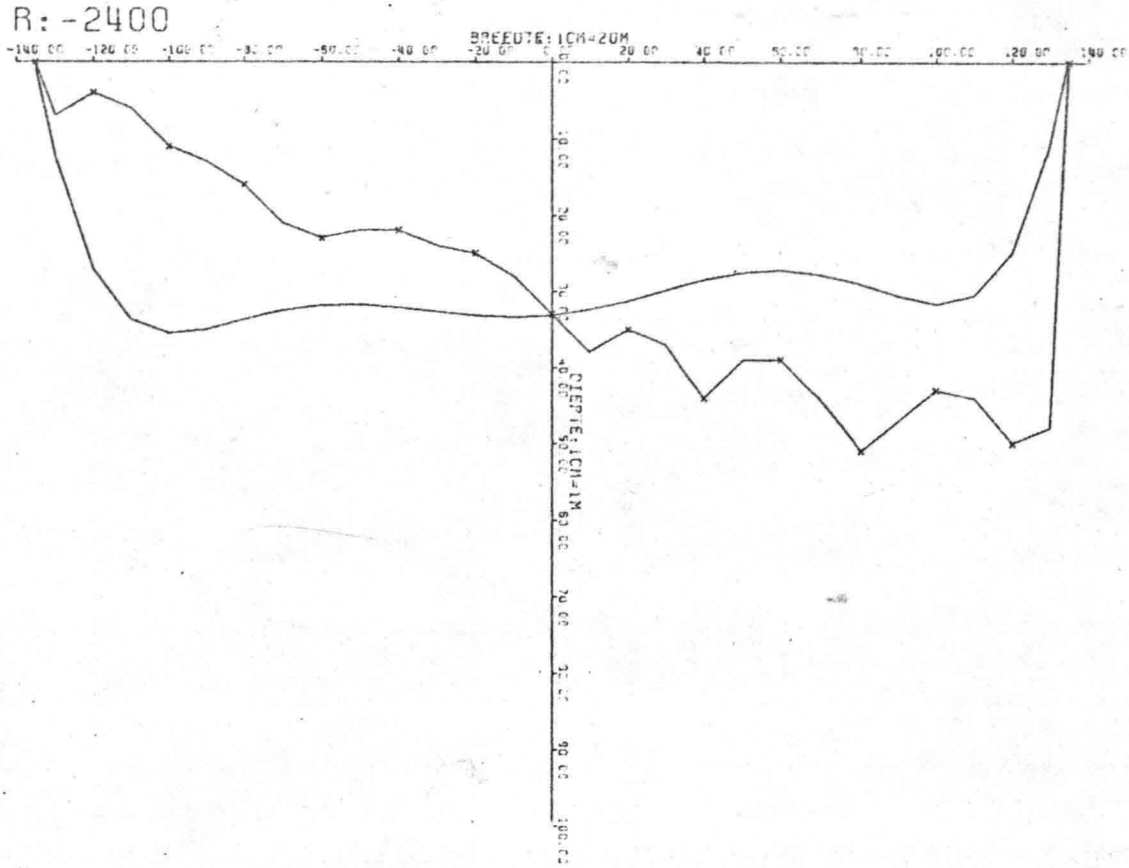

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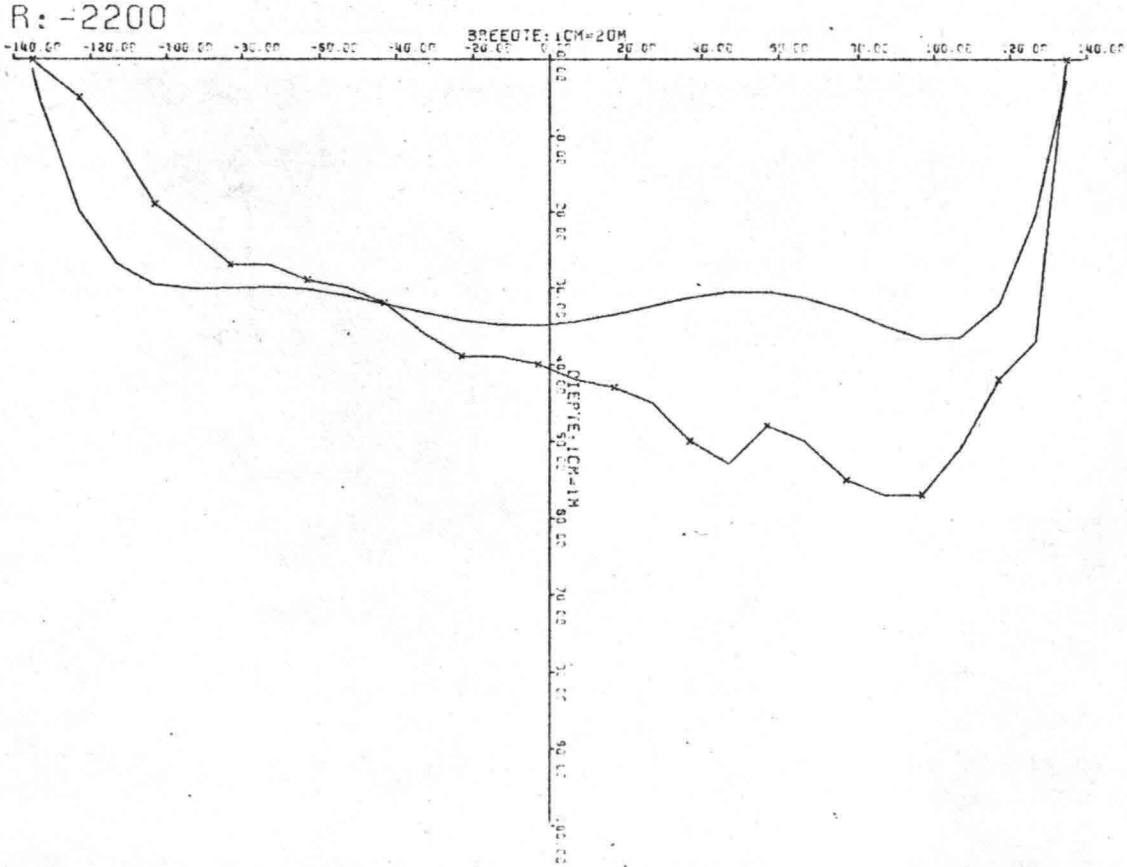

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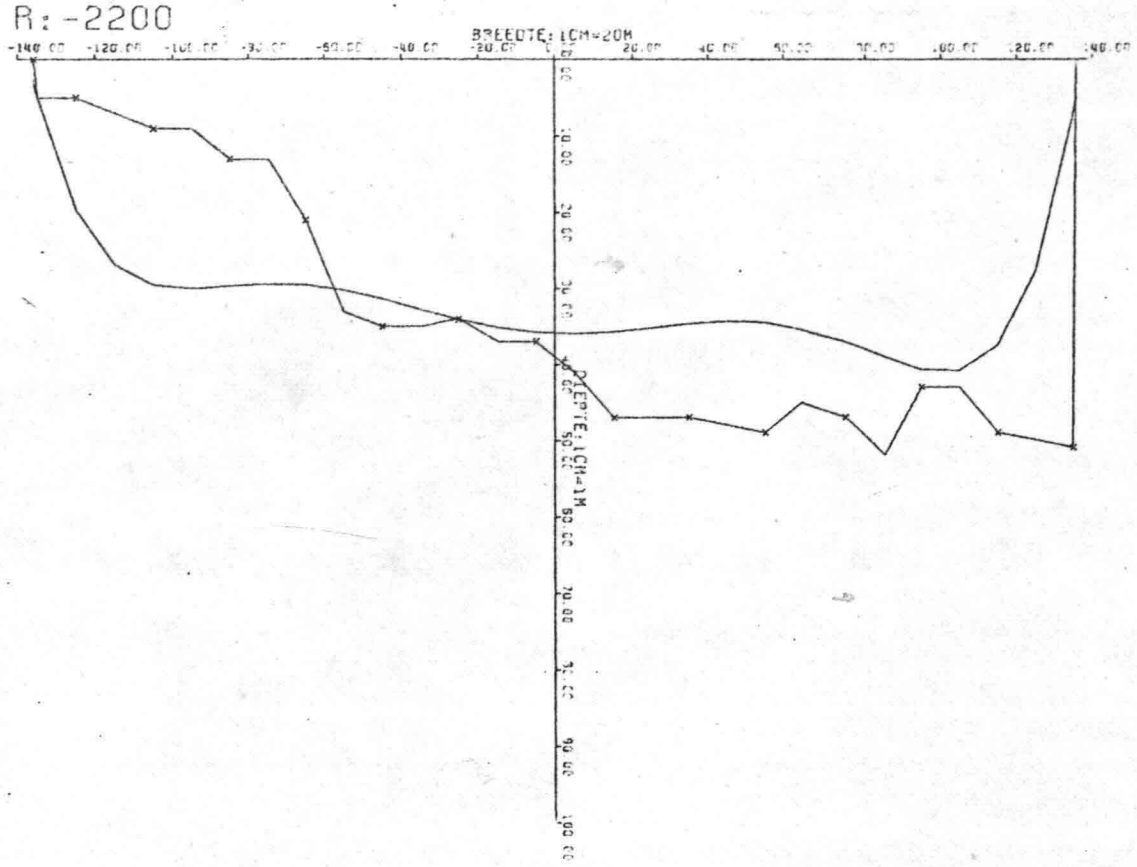

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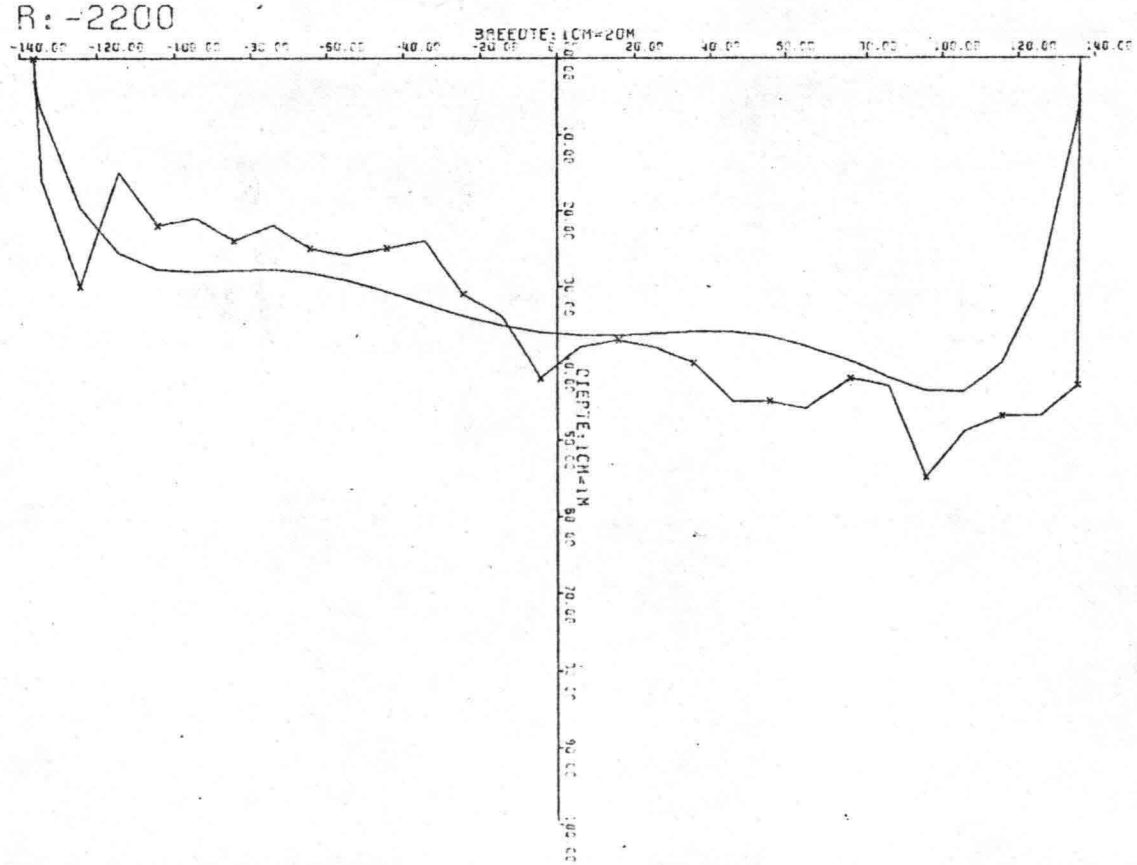

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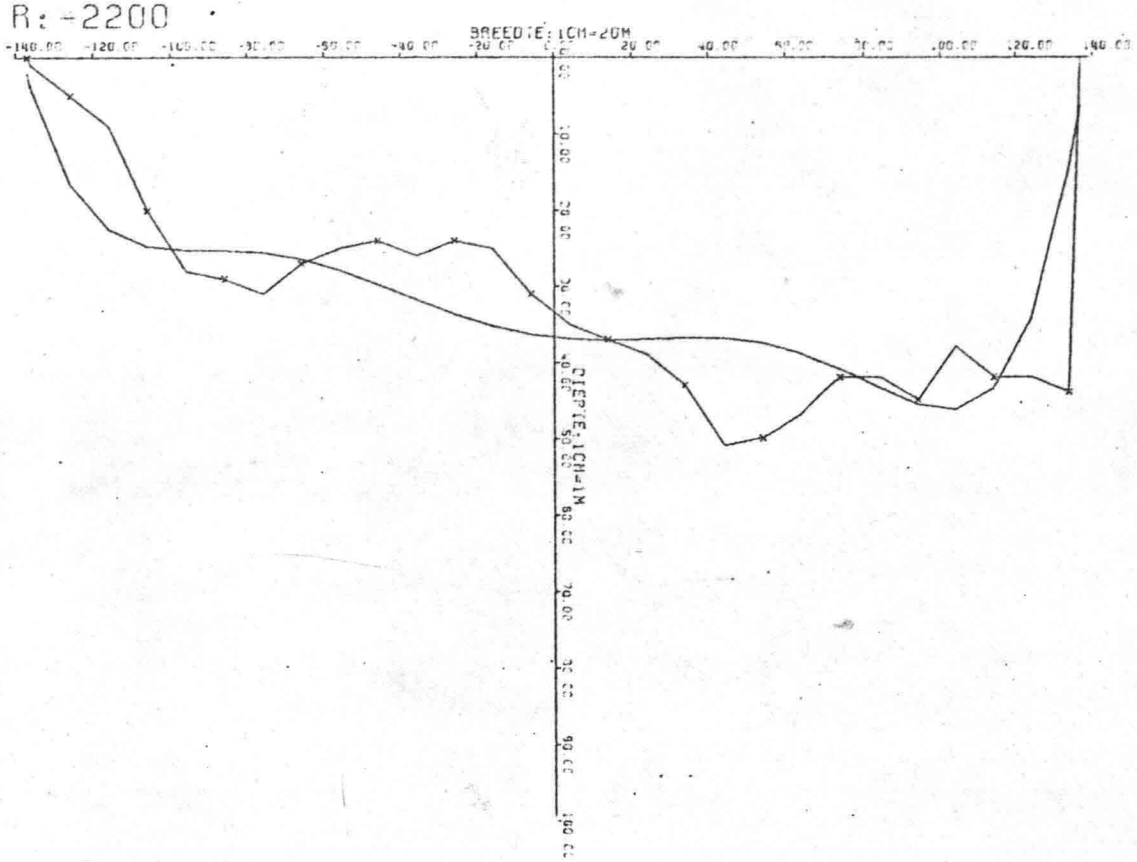

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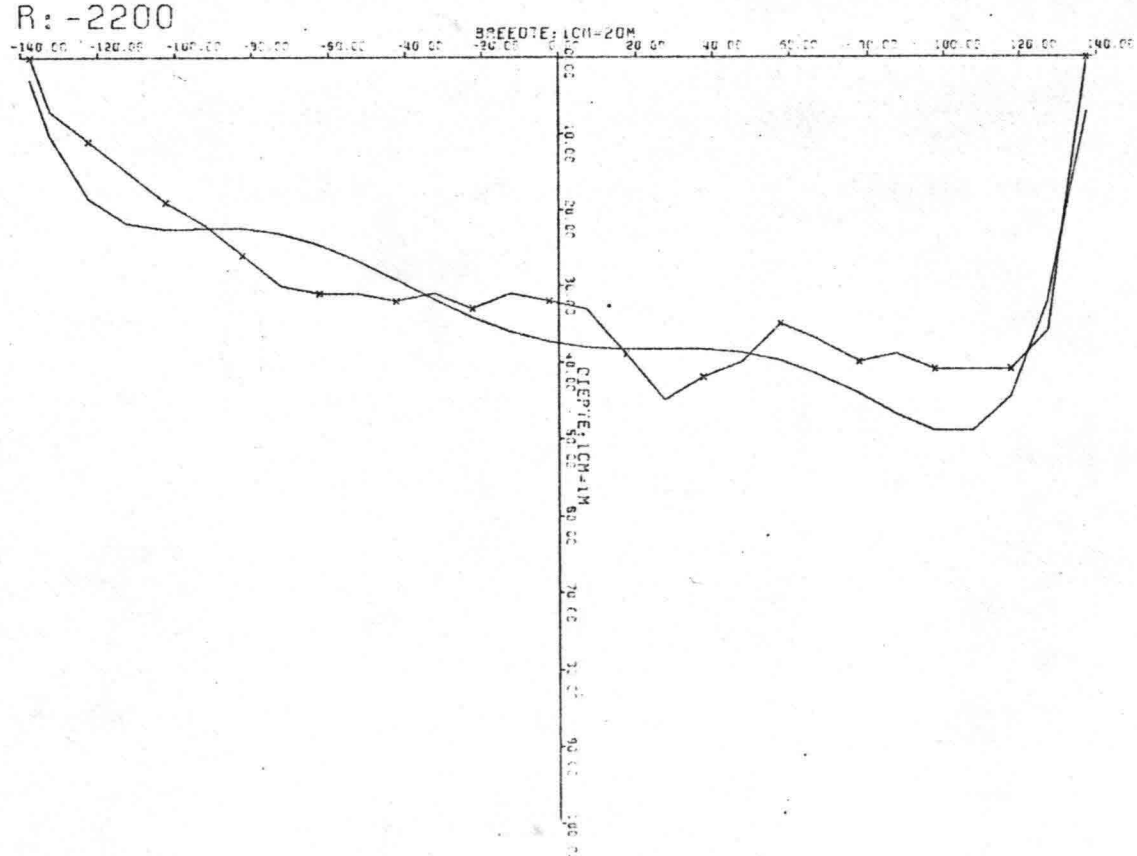

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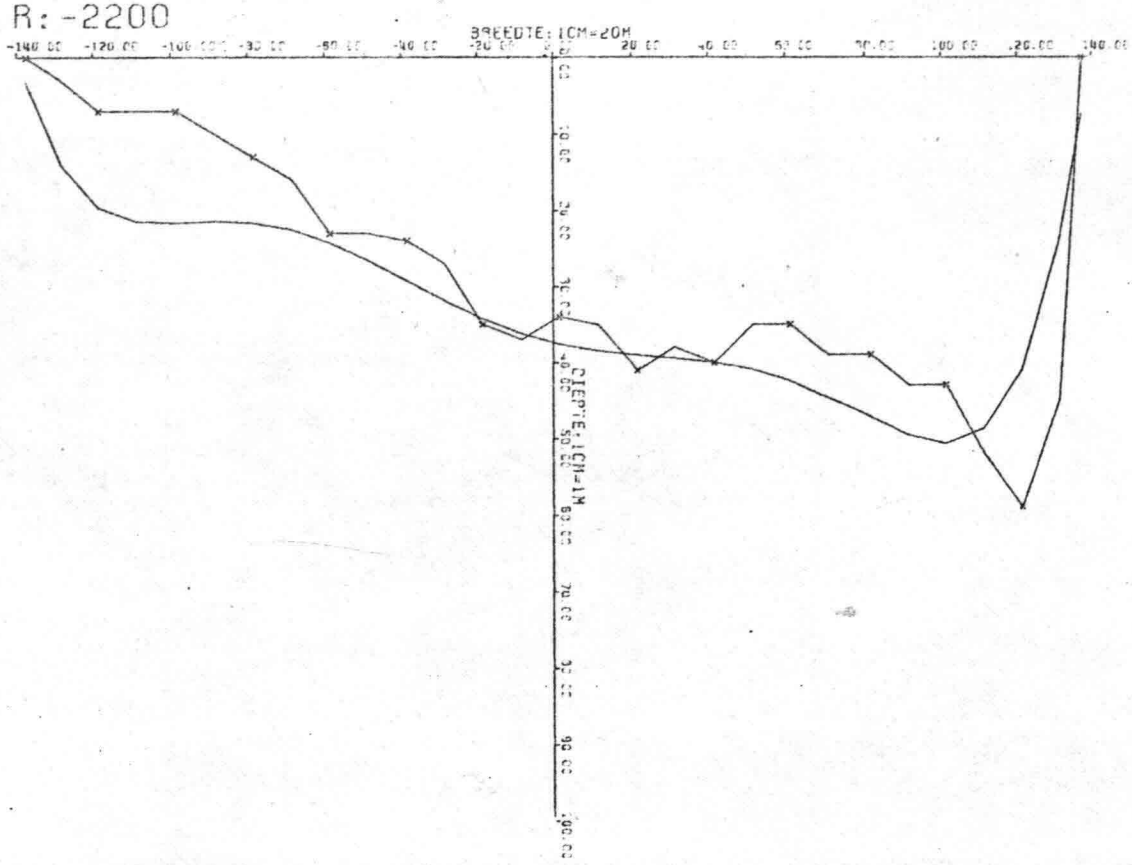

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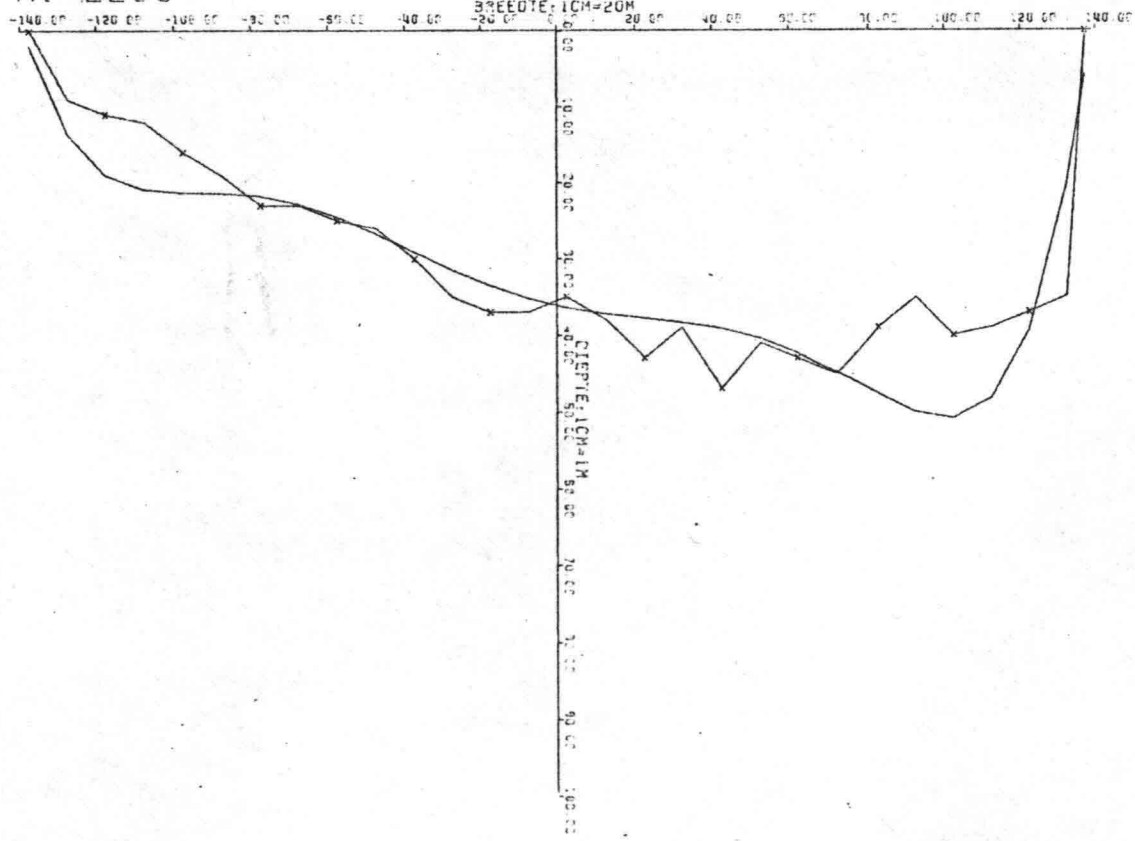

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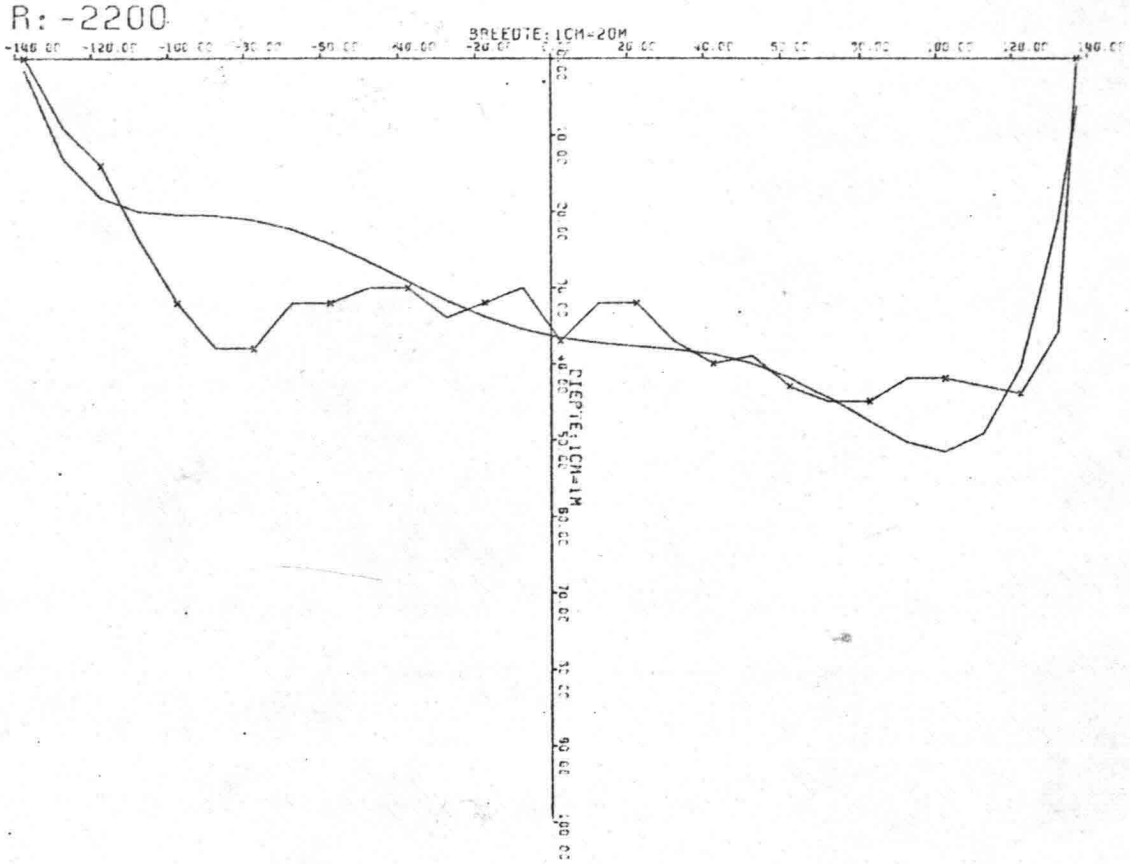

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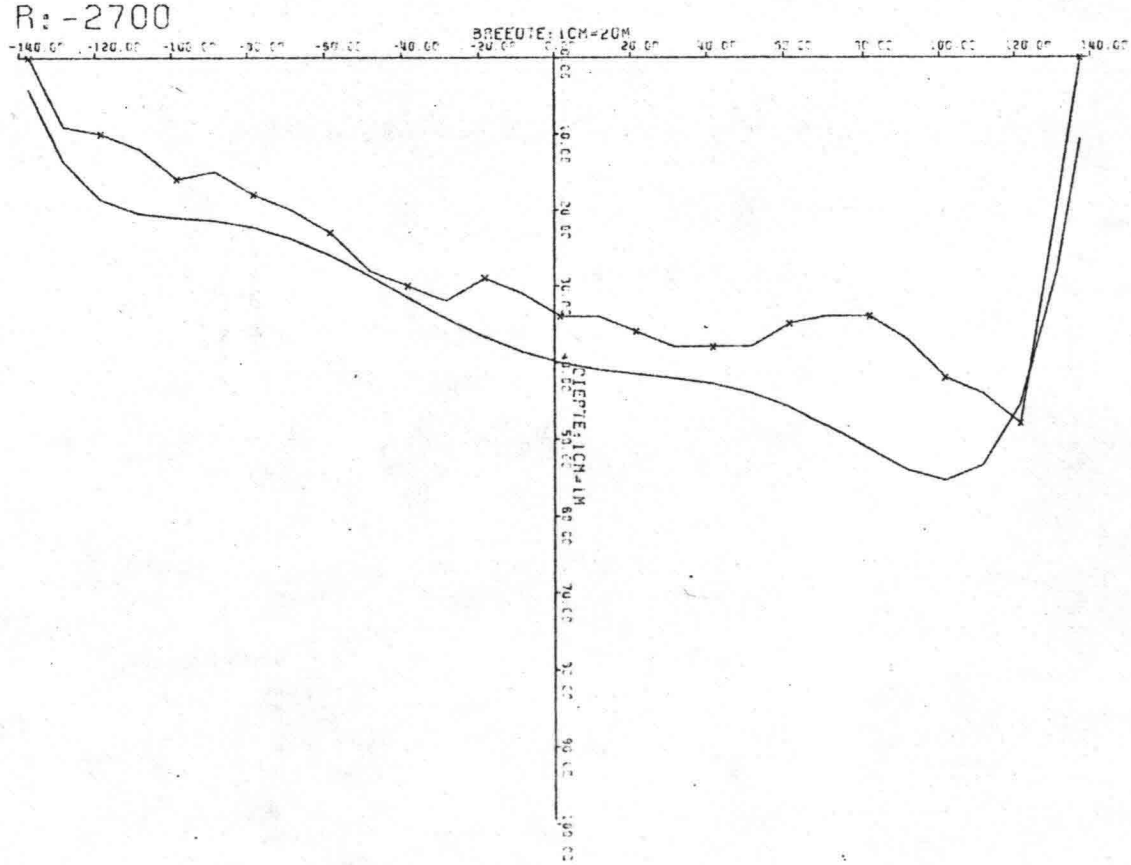

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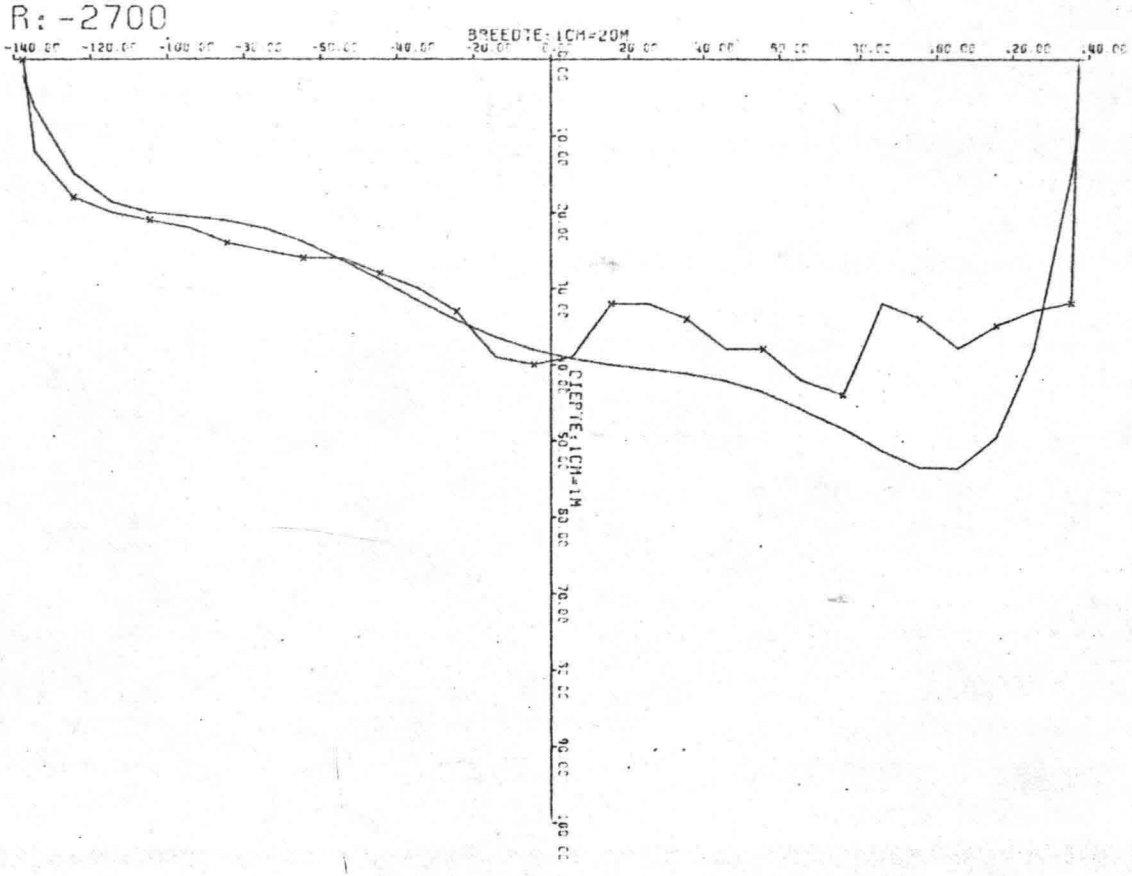

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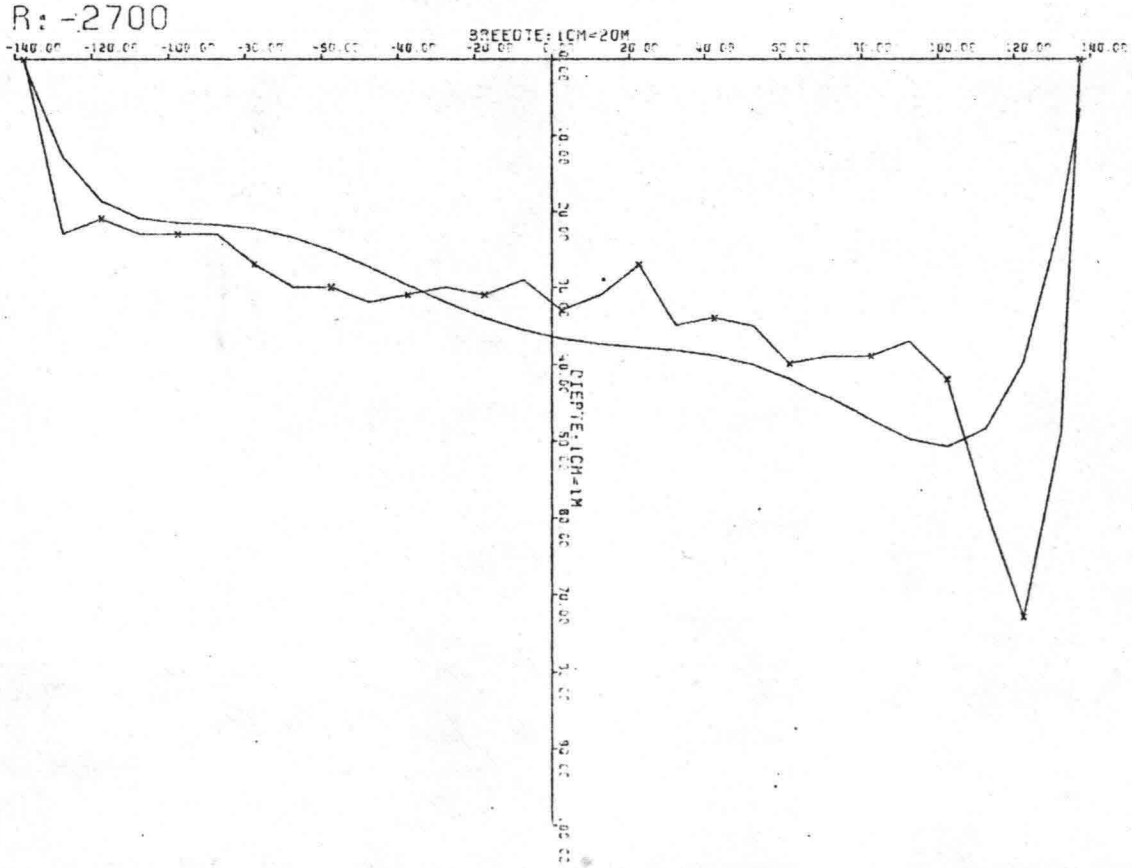

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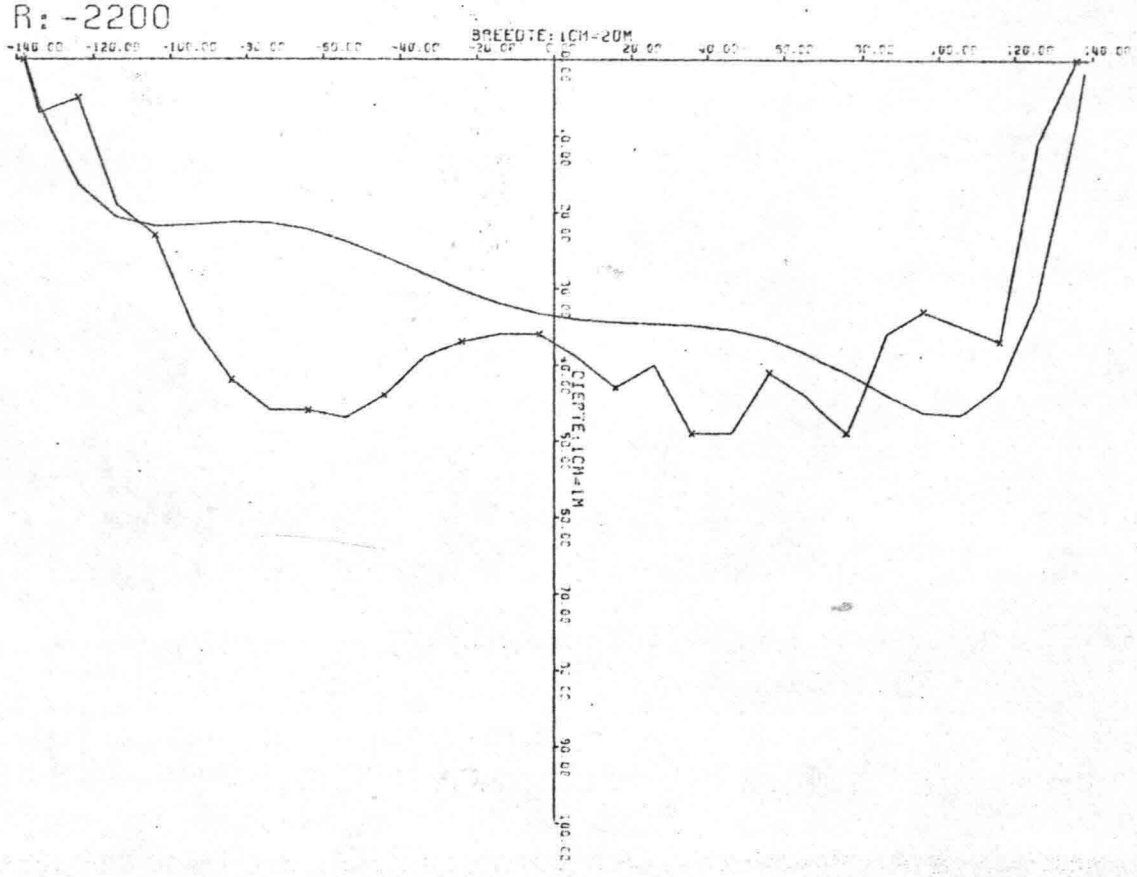

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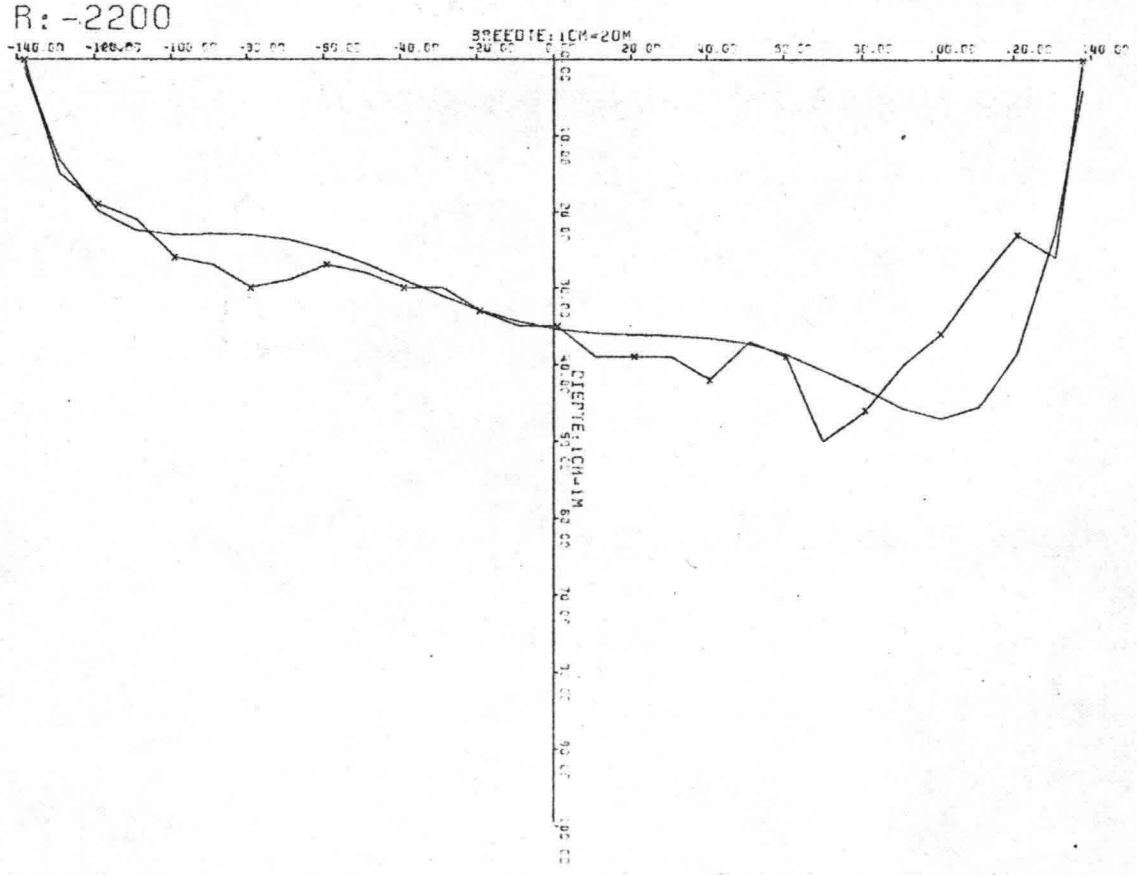

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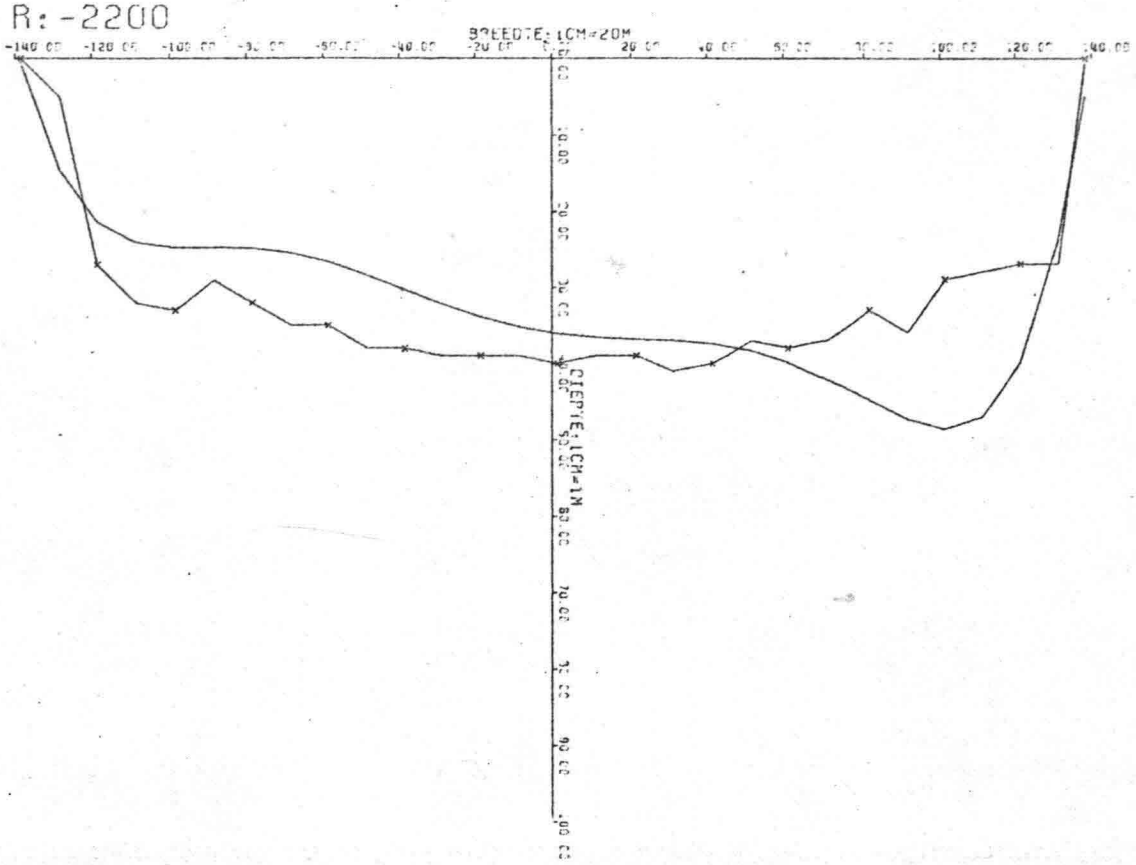

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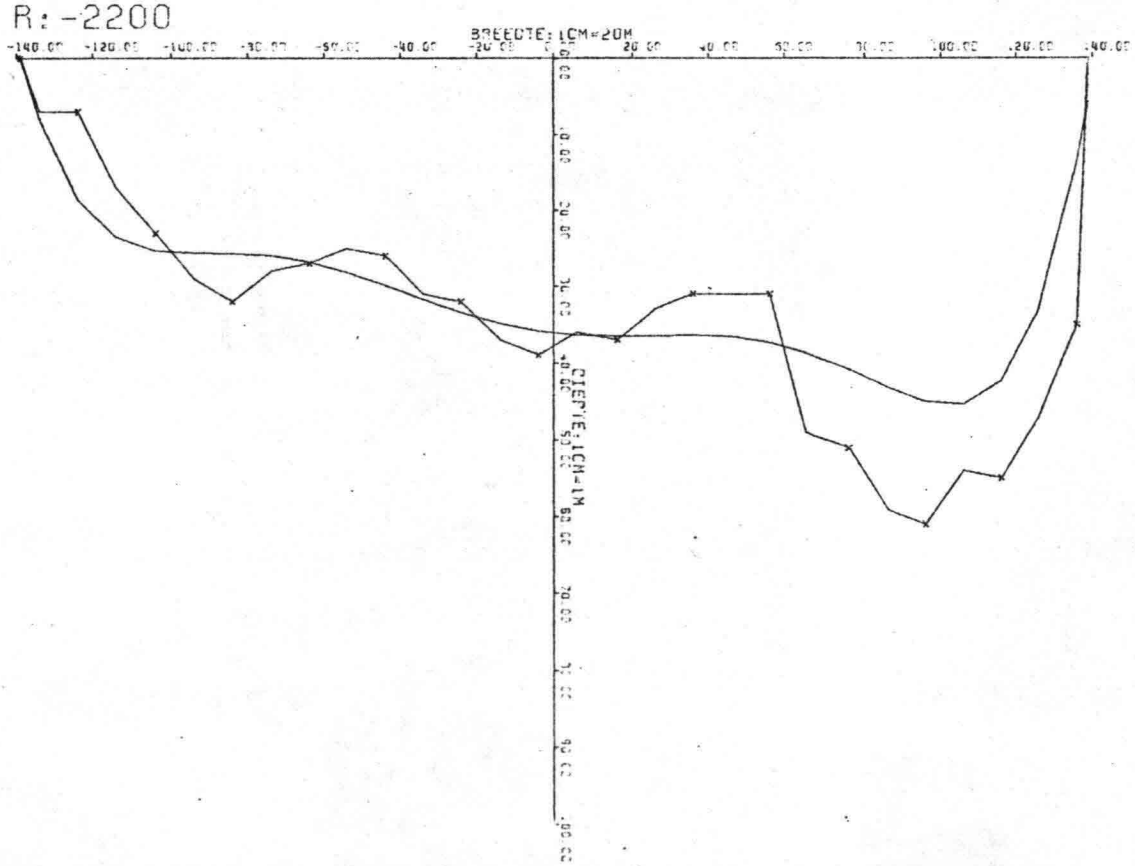

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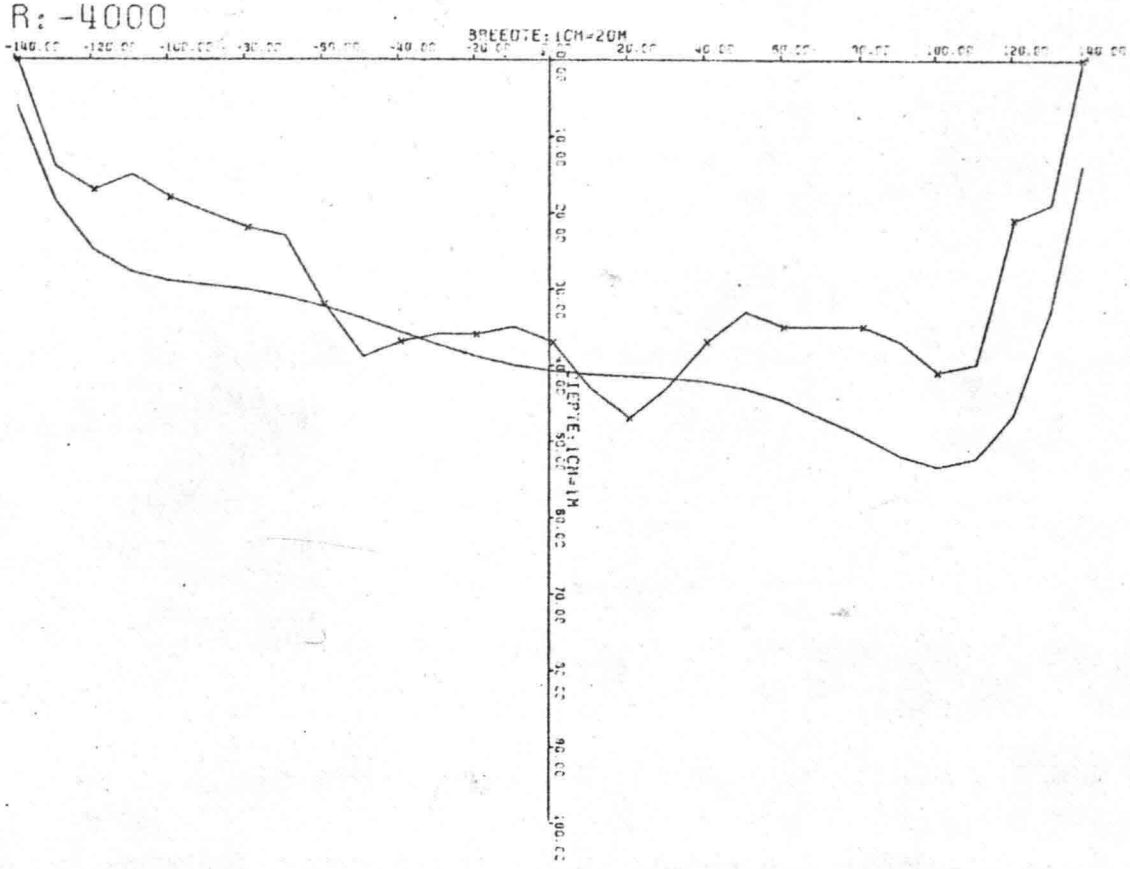

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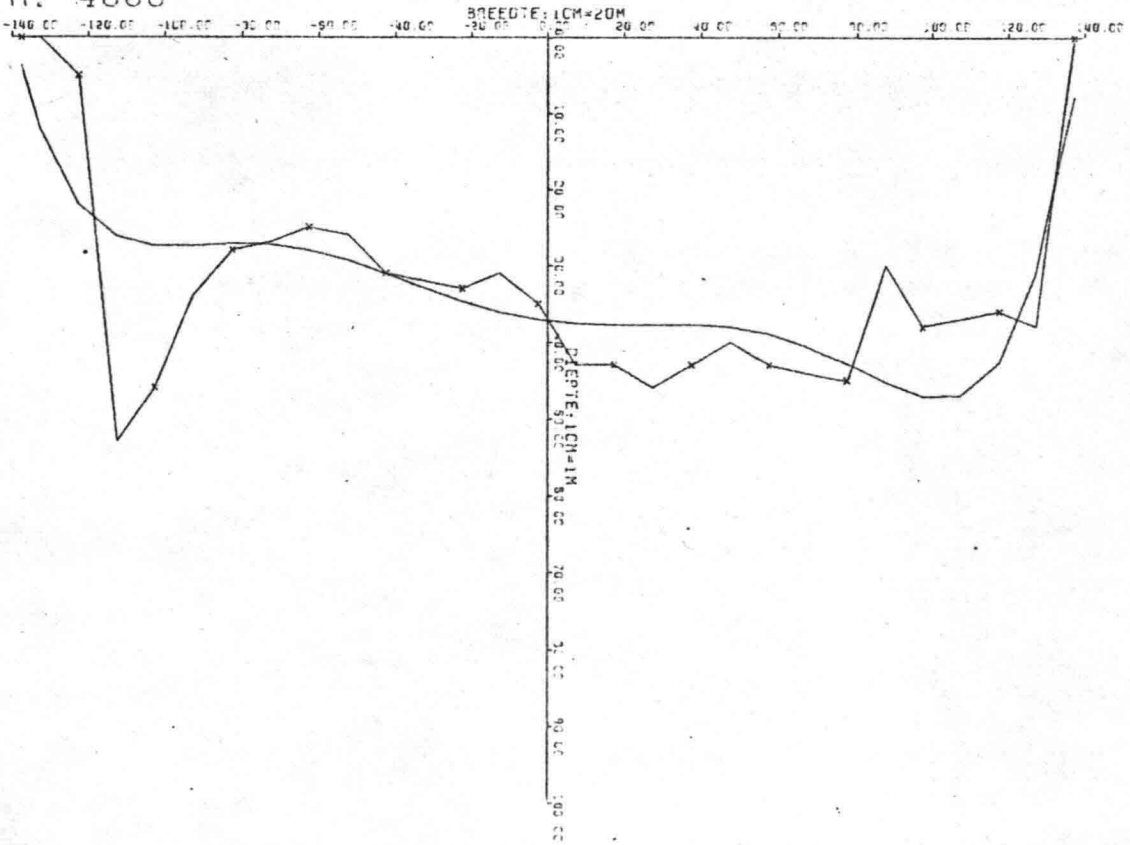

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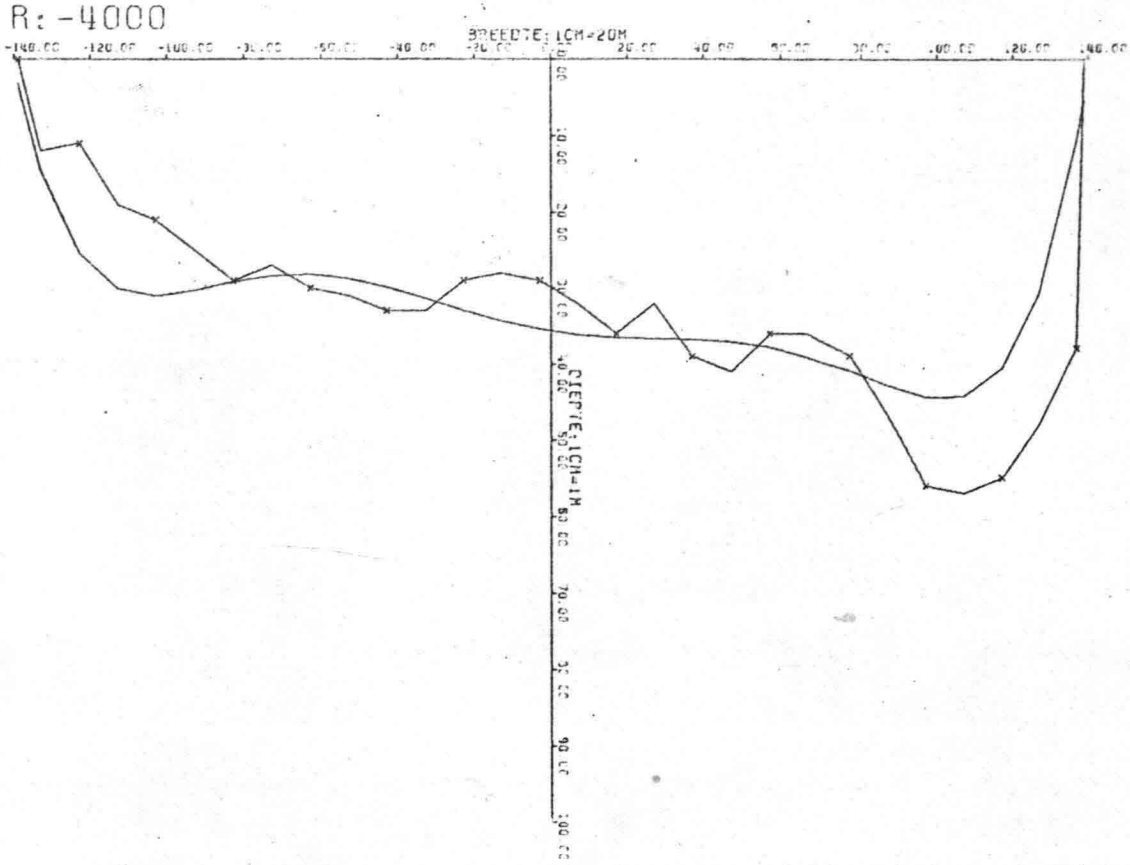

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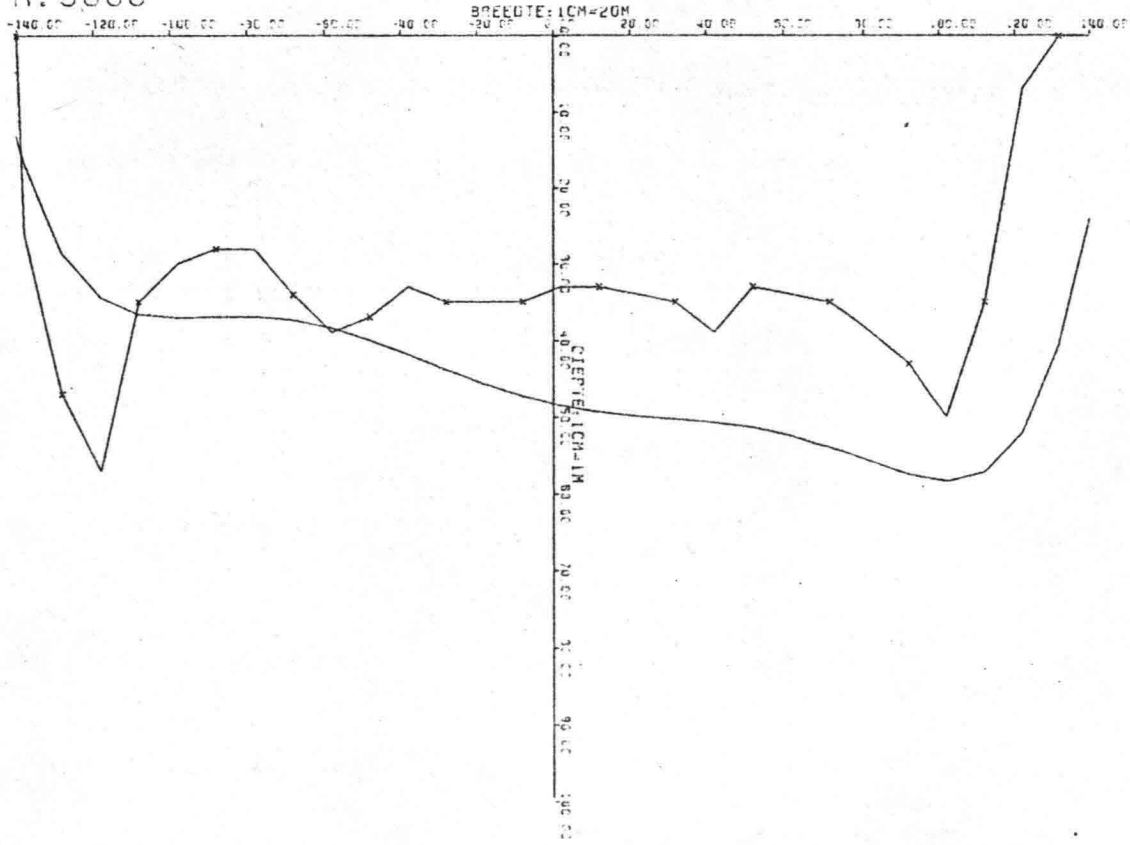

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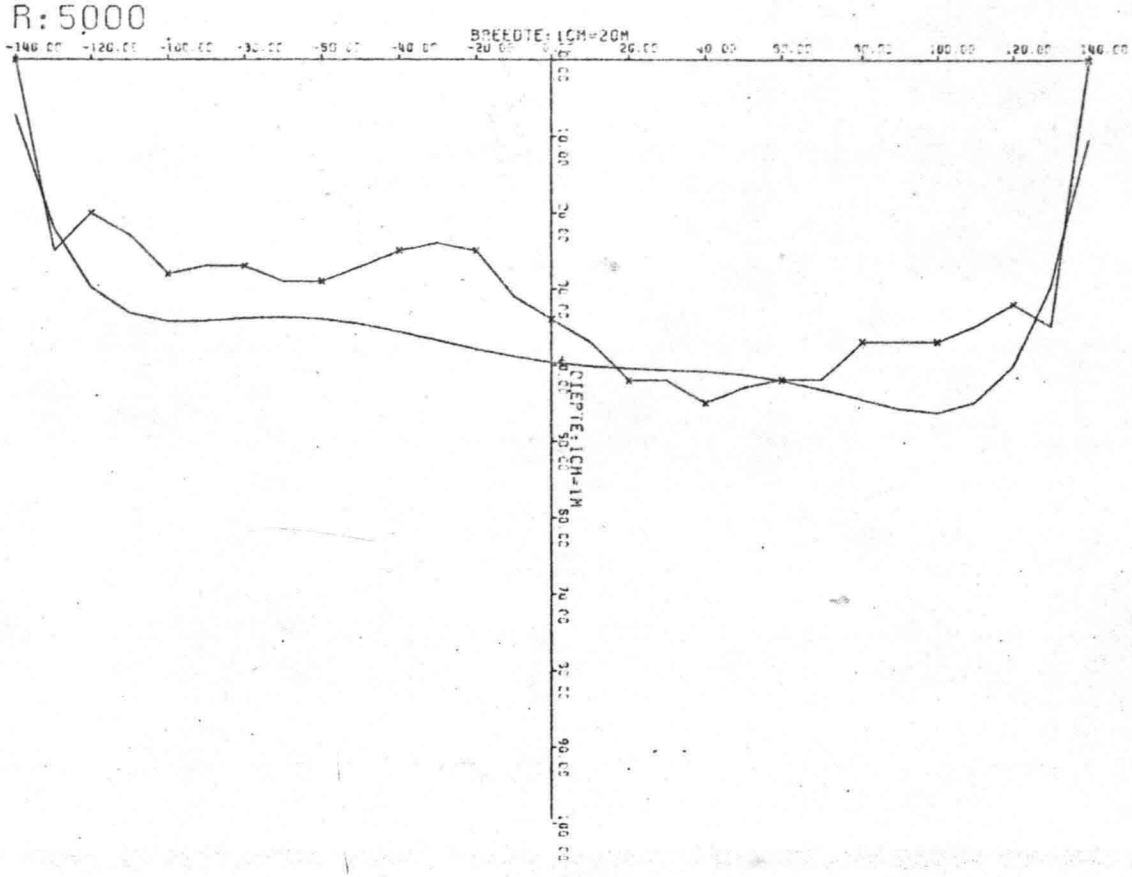

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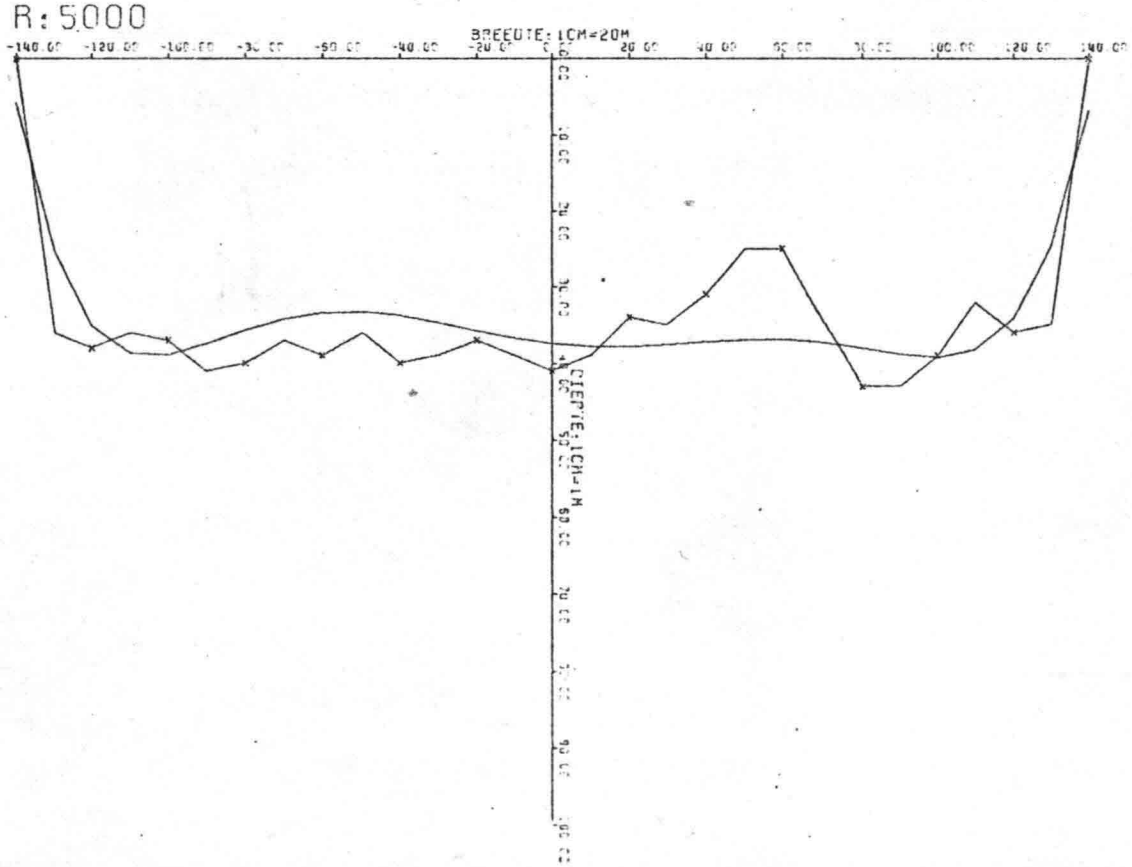

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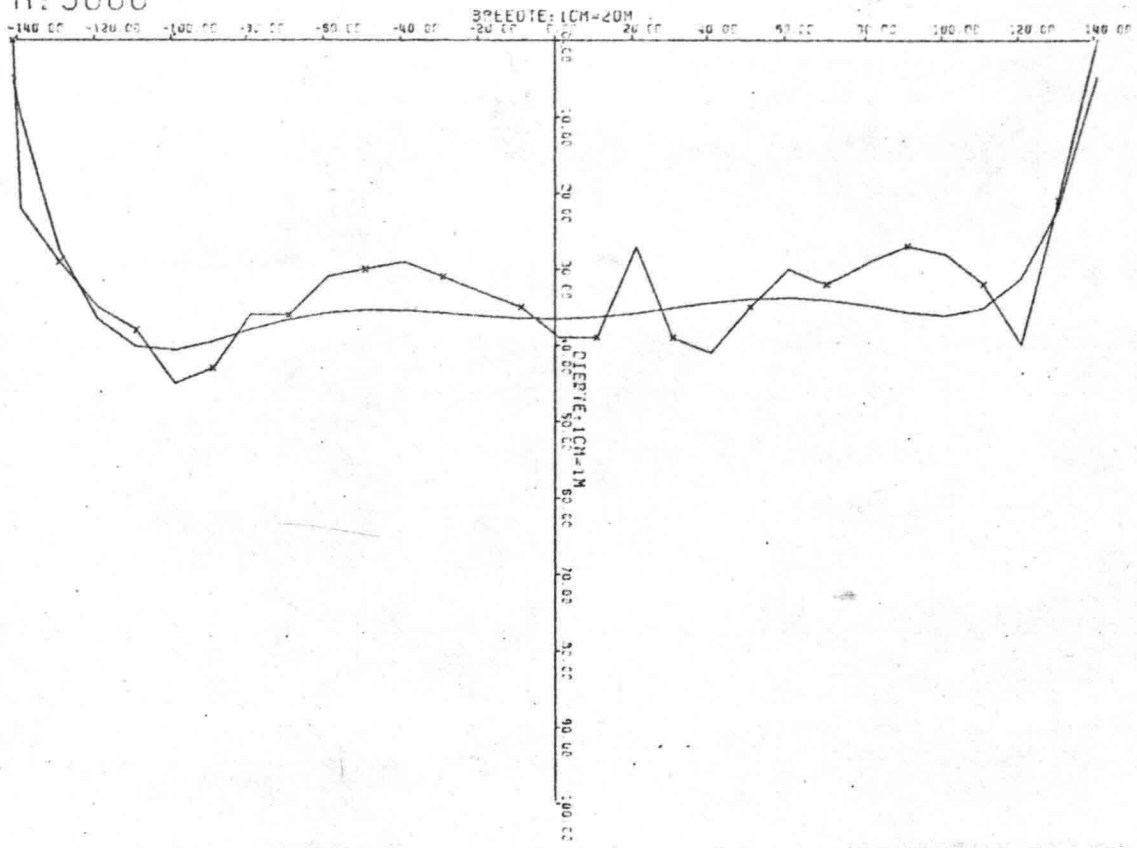

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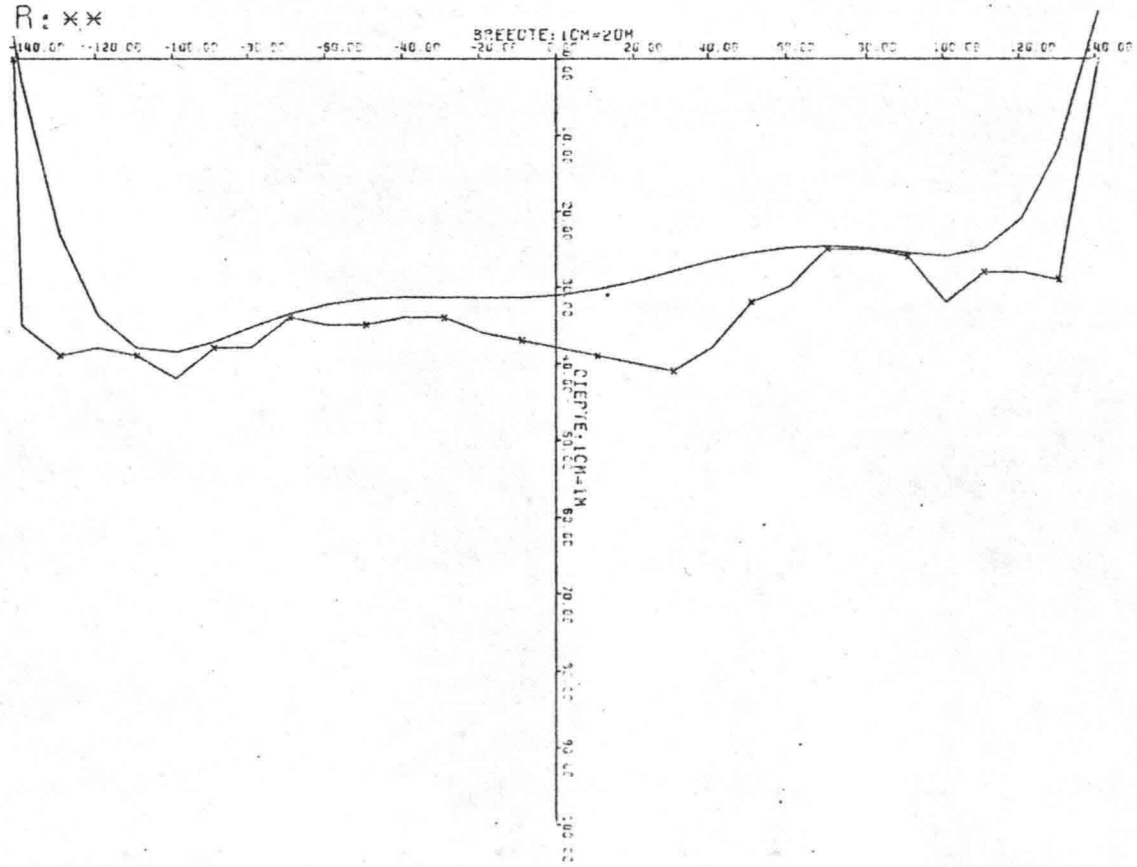
R: ××



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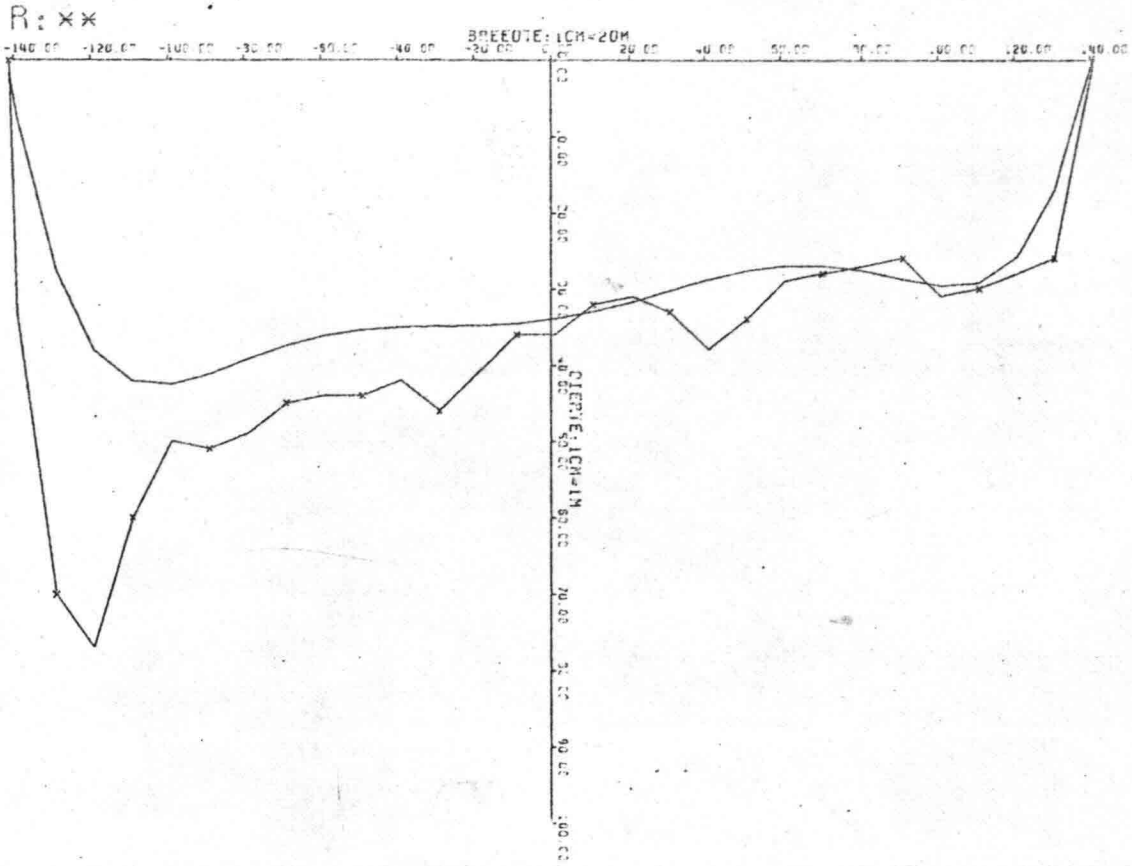

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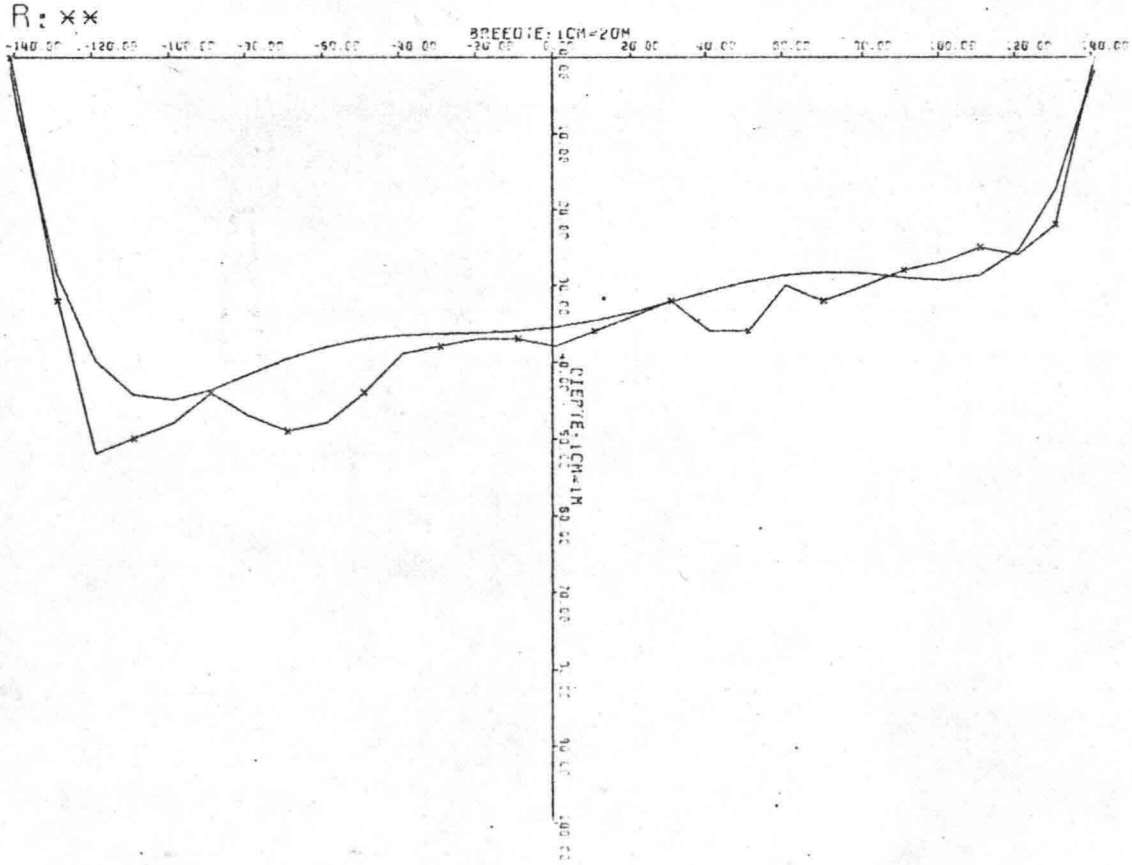

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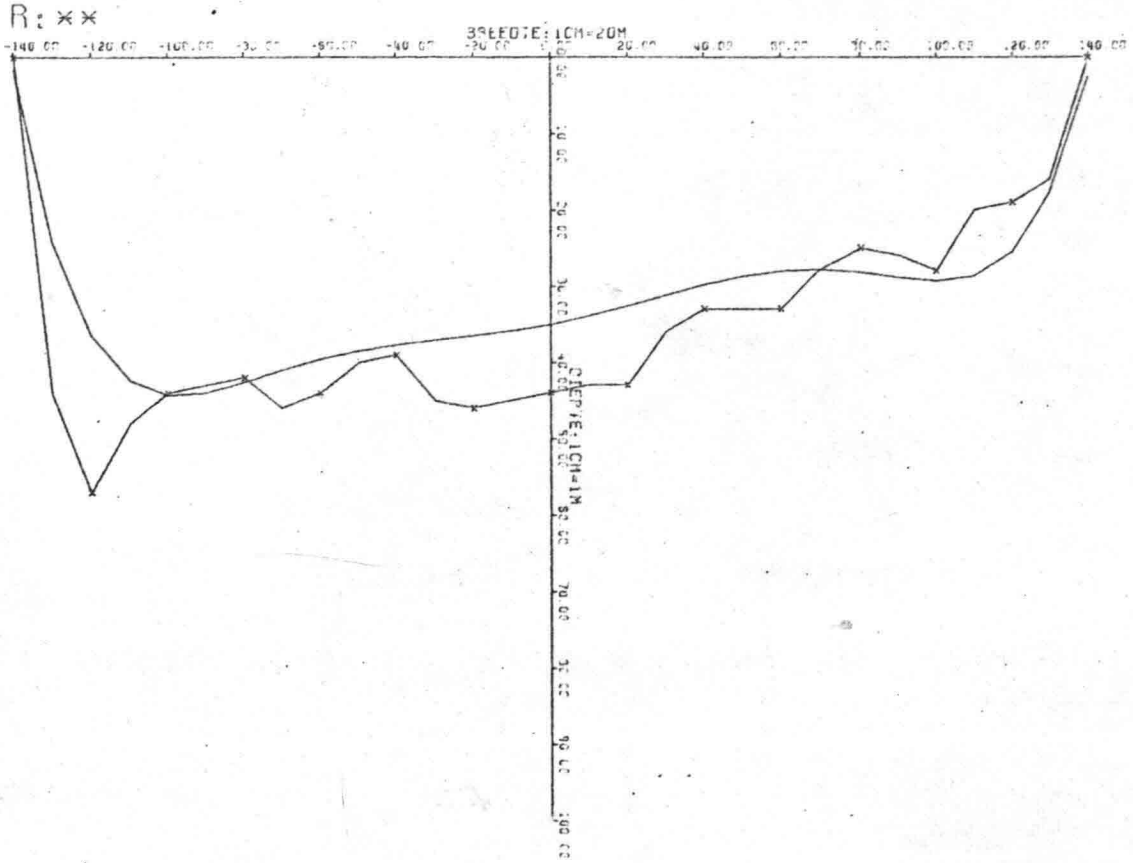
R: ××



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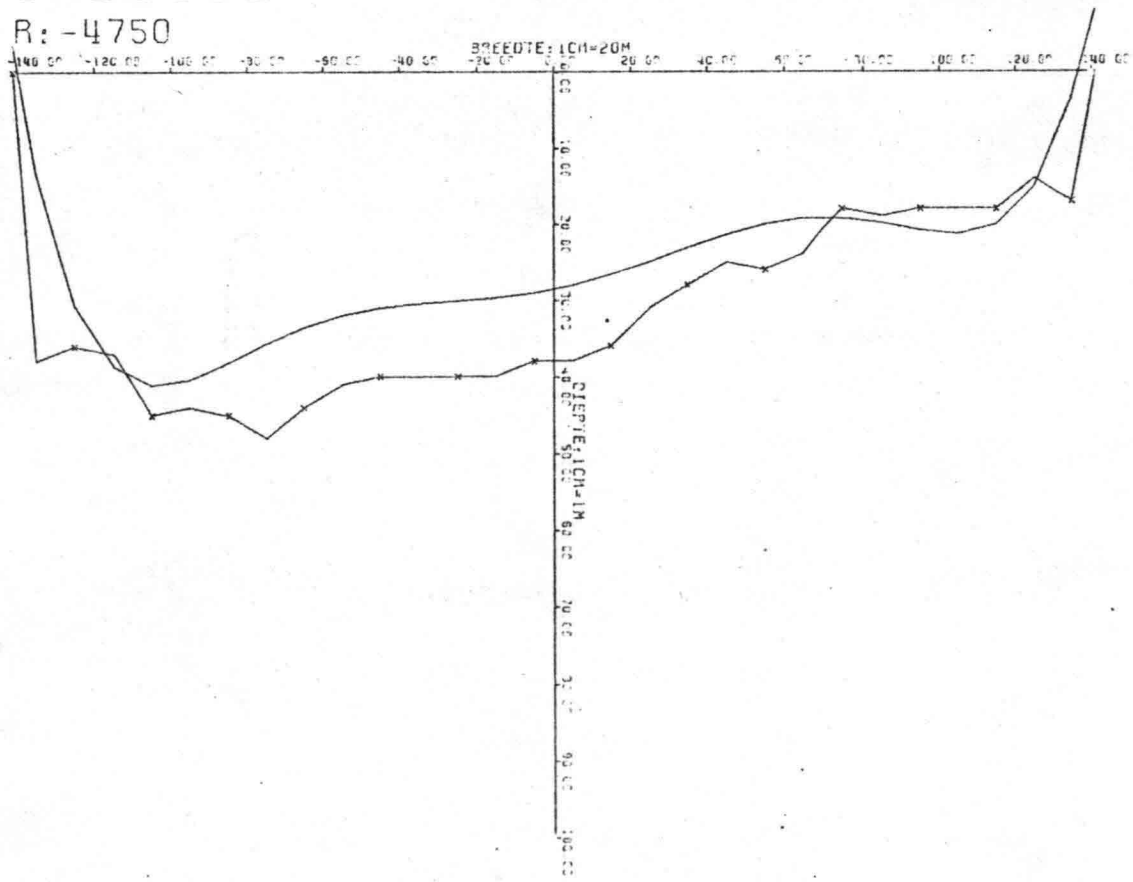

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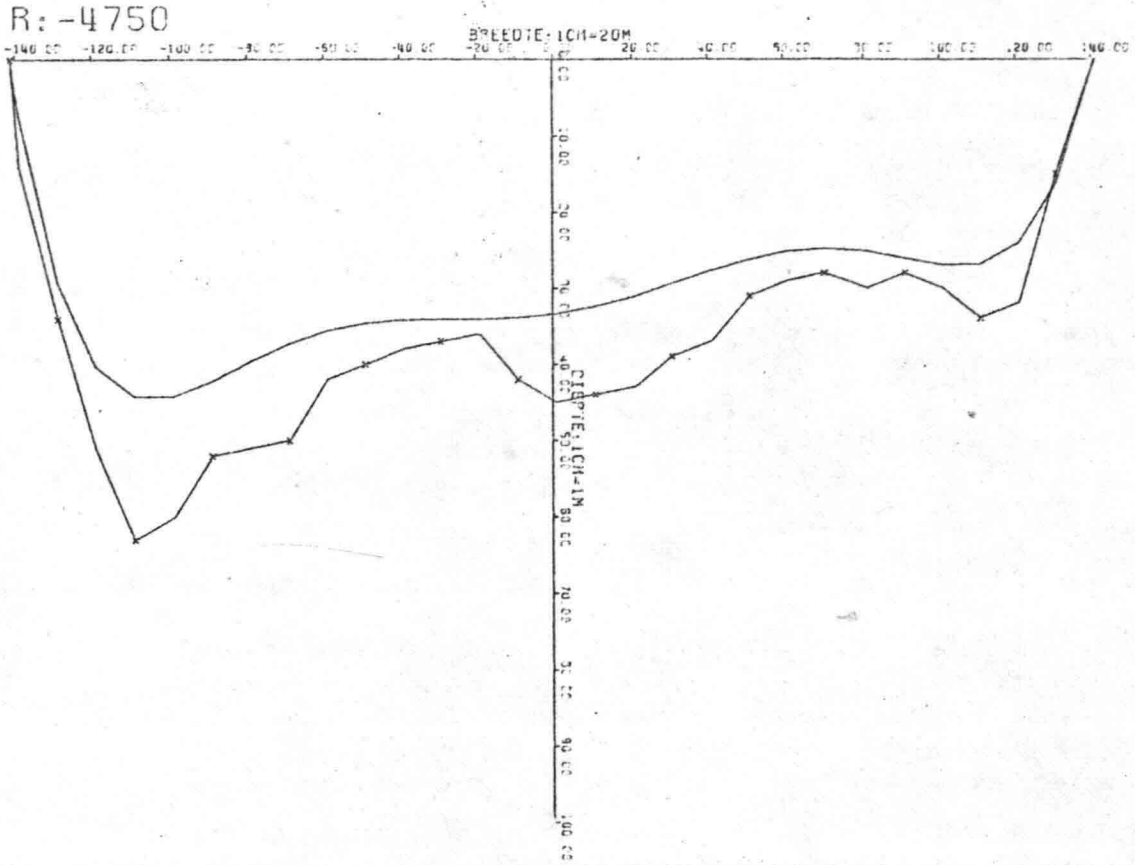

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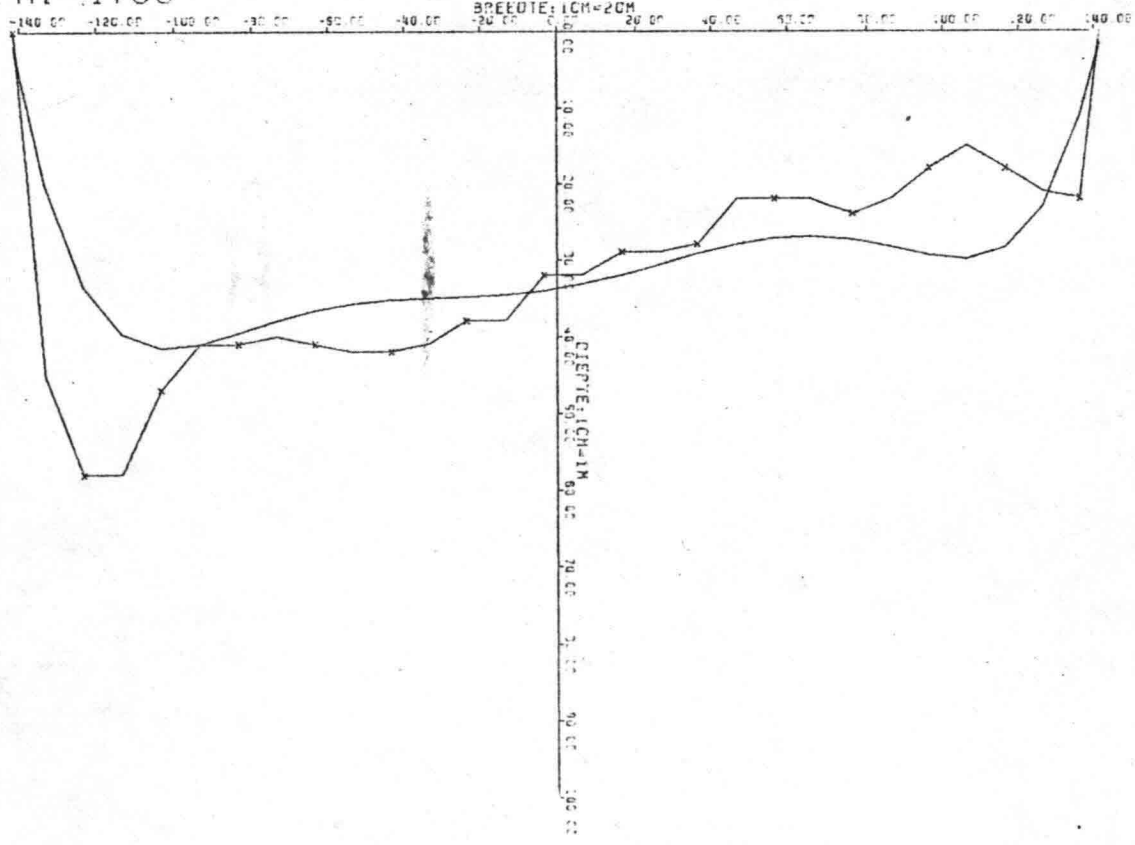

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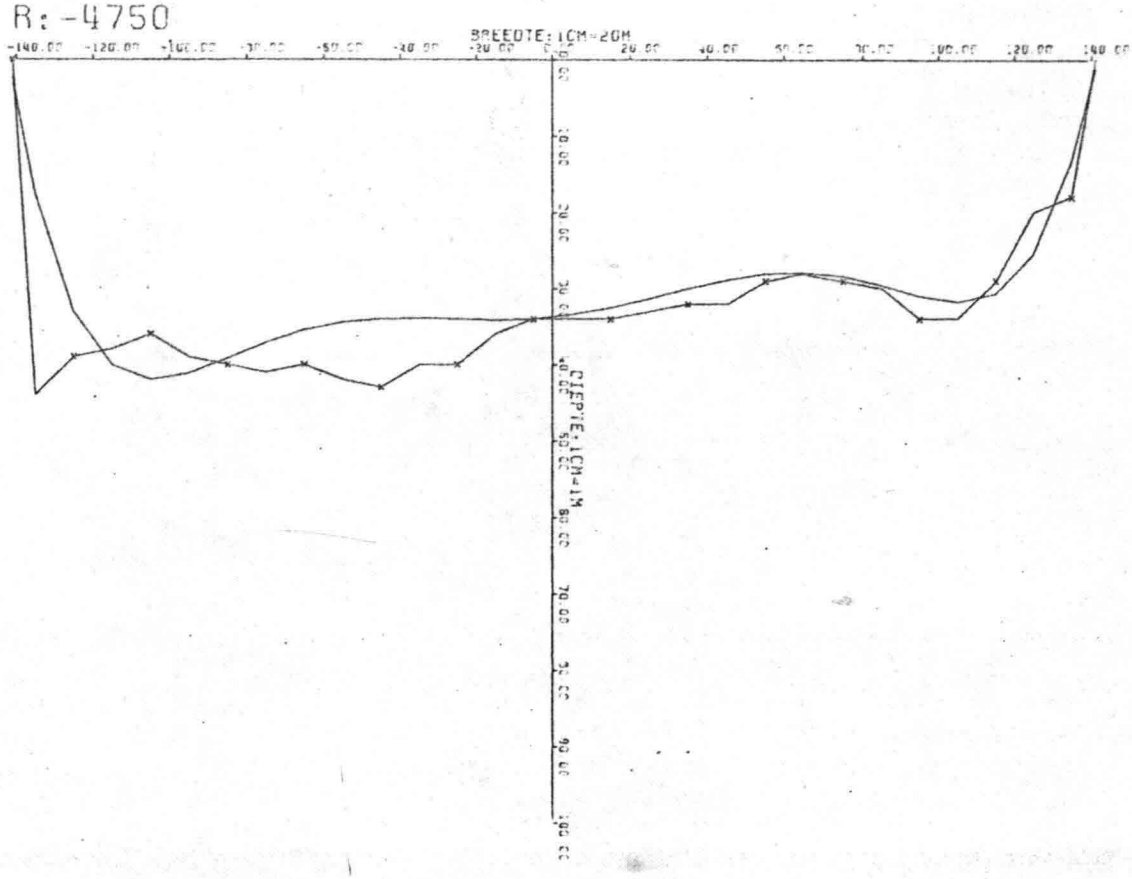

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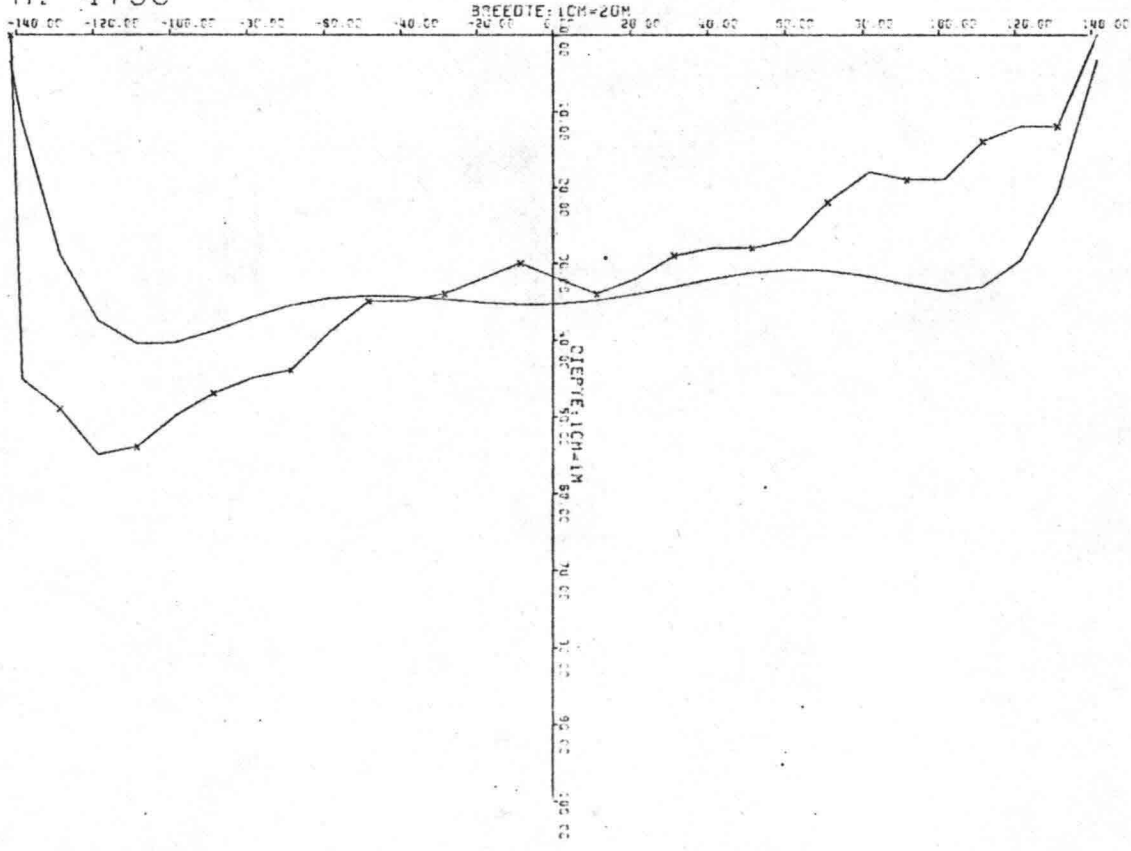

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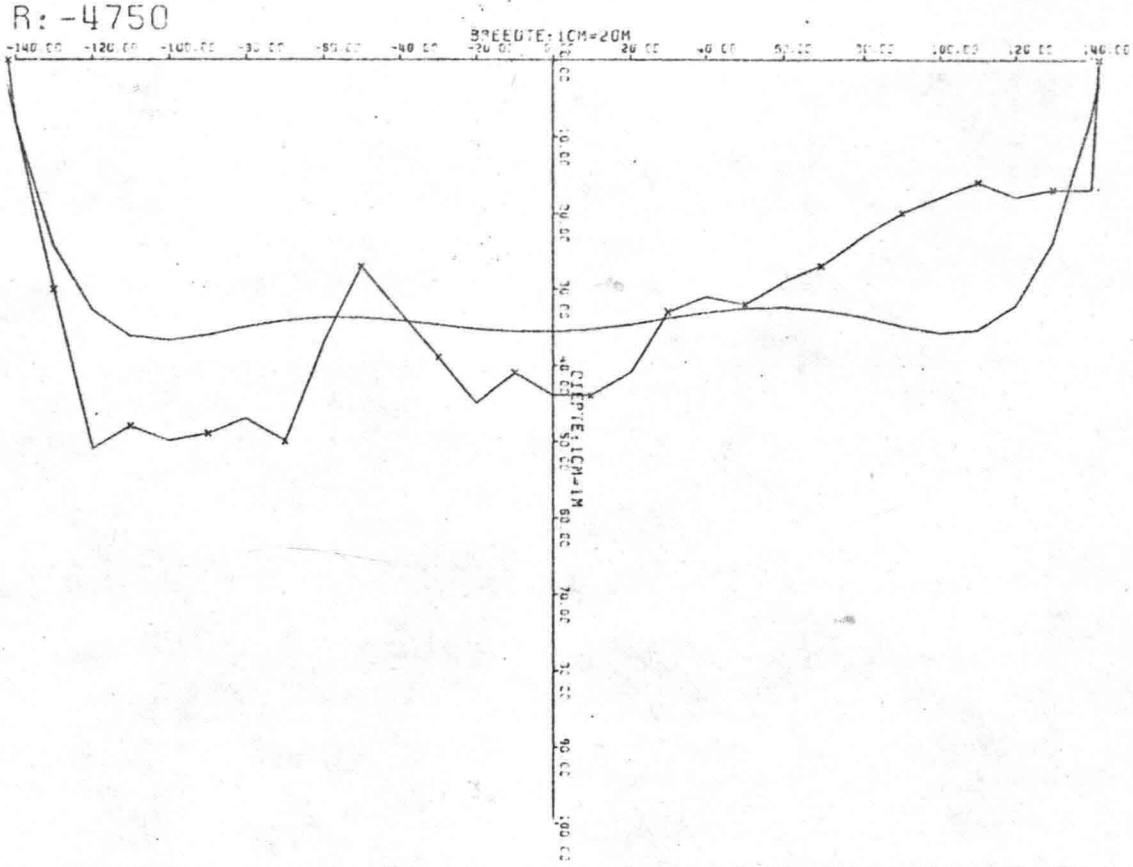

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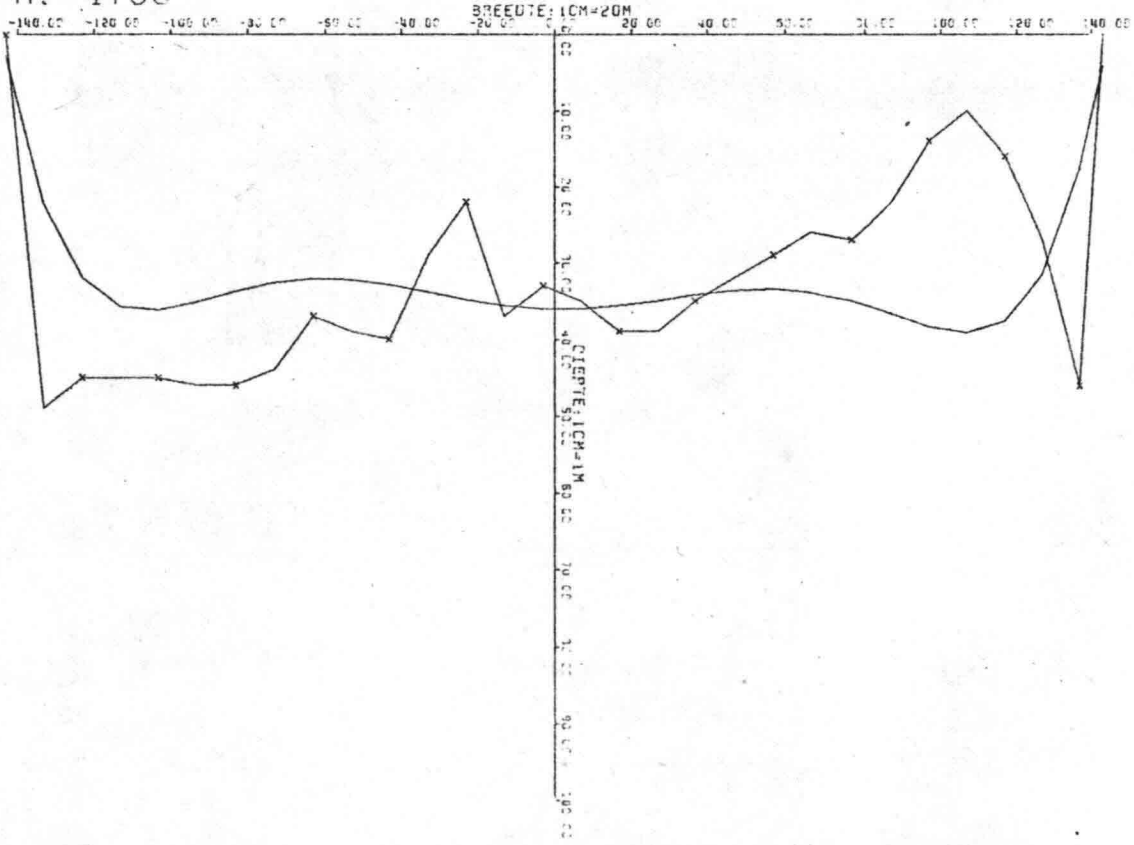

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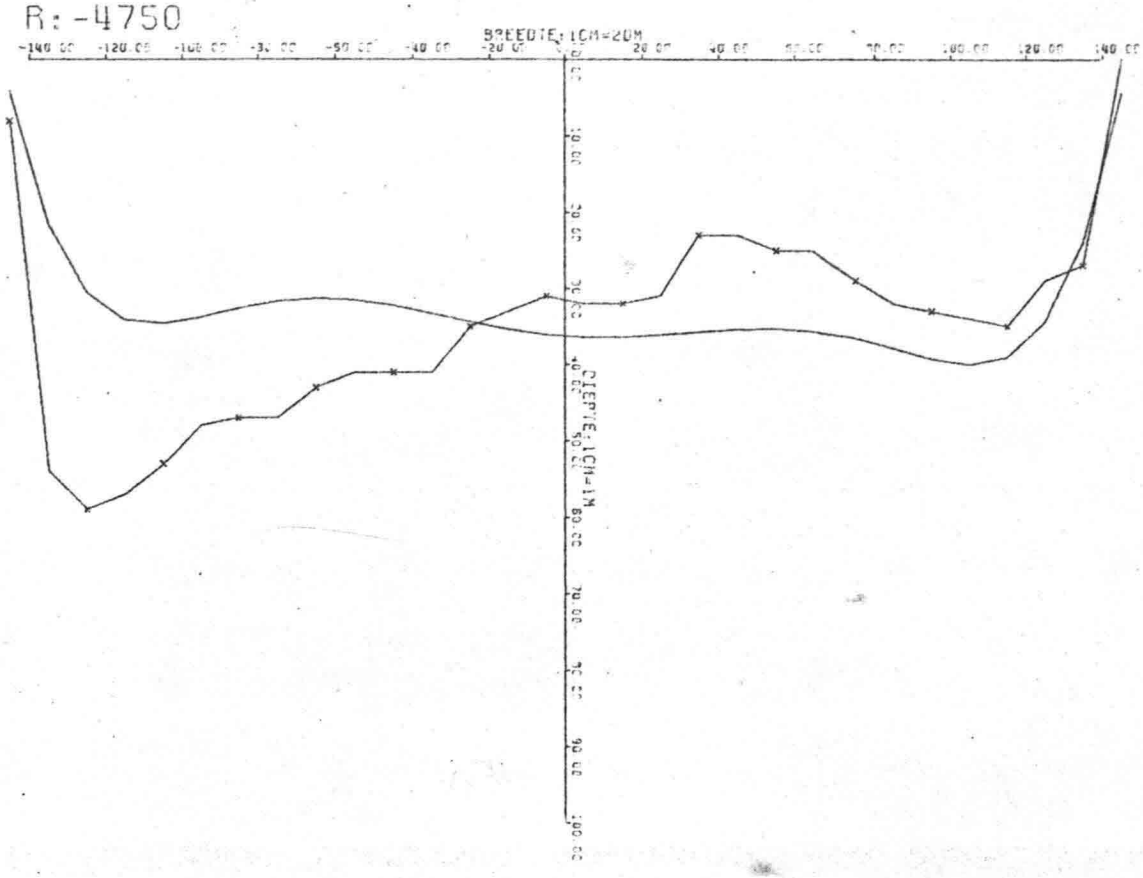

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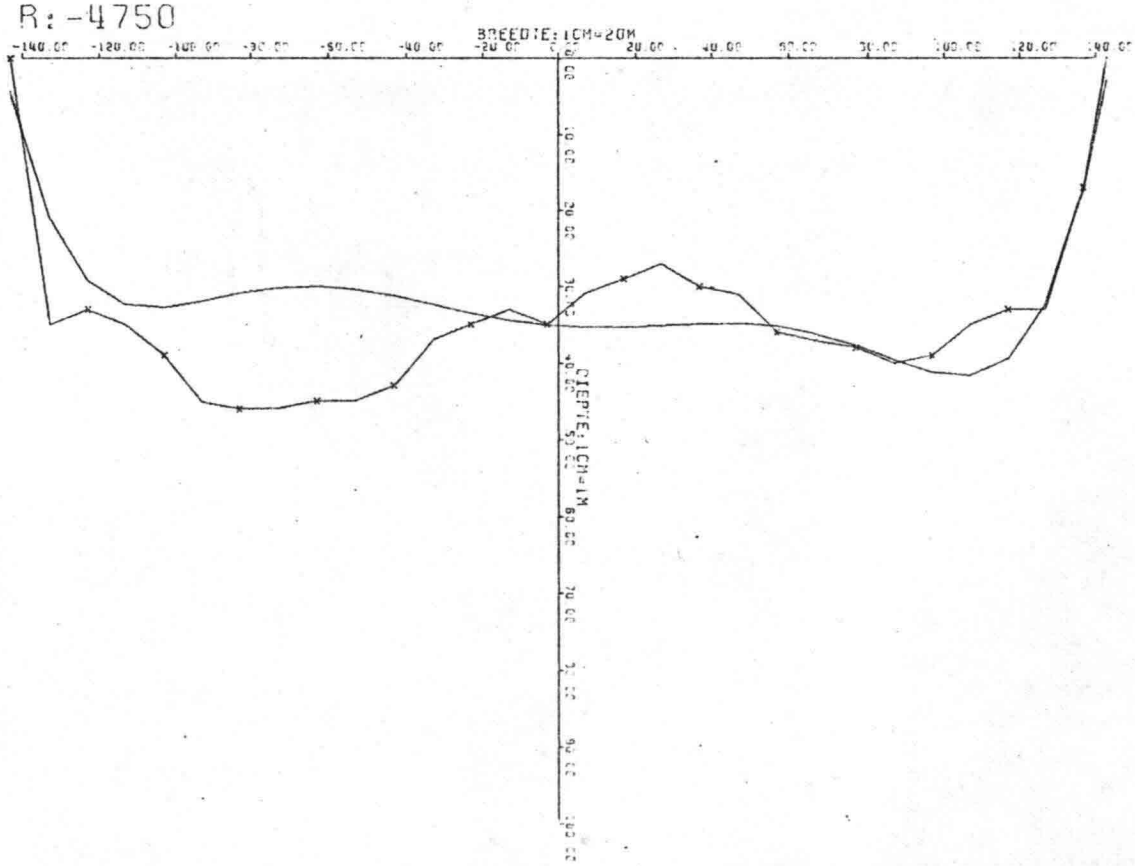

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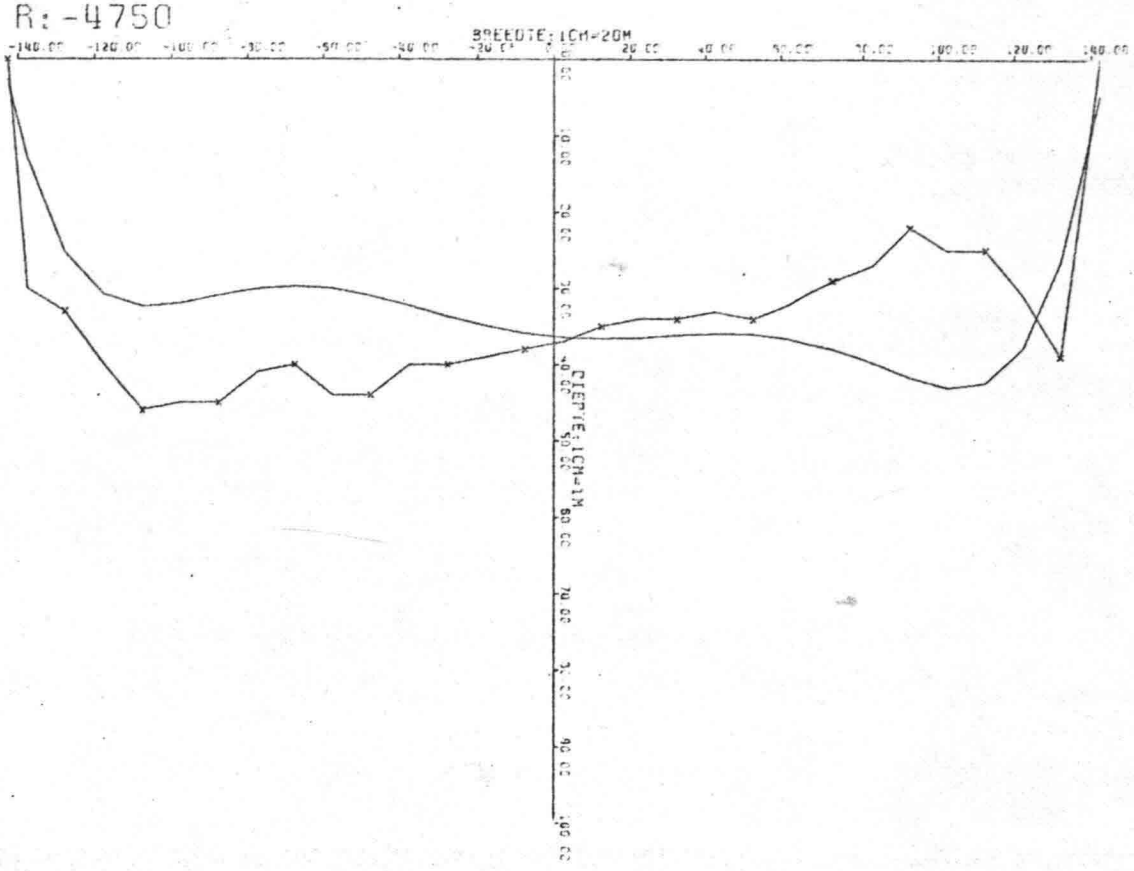

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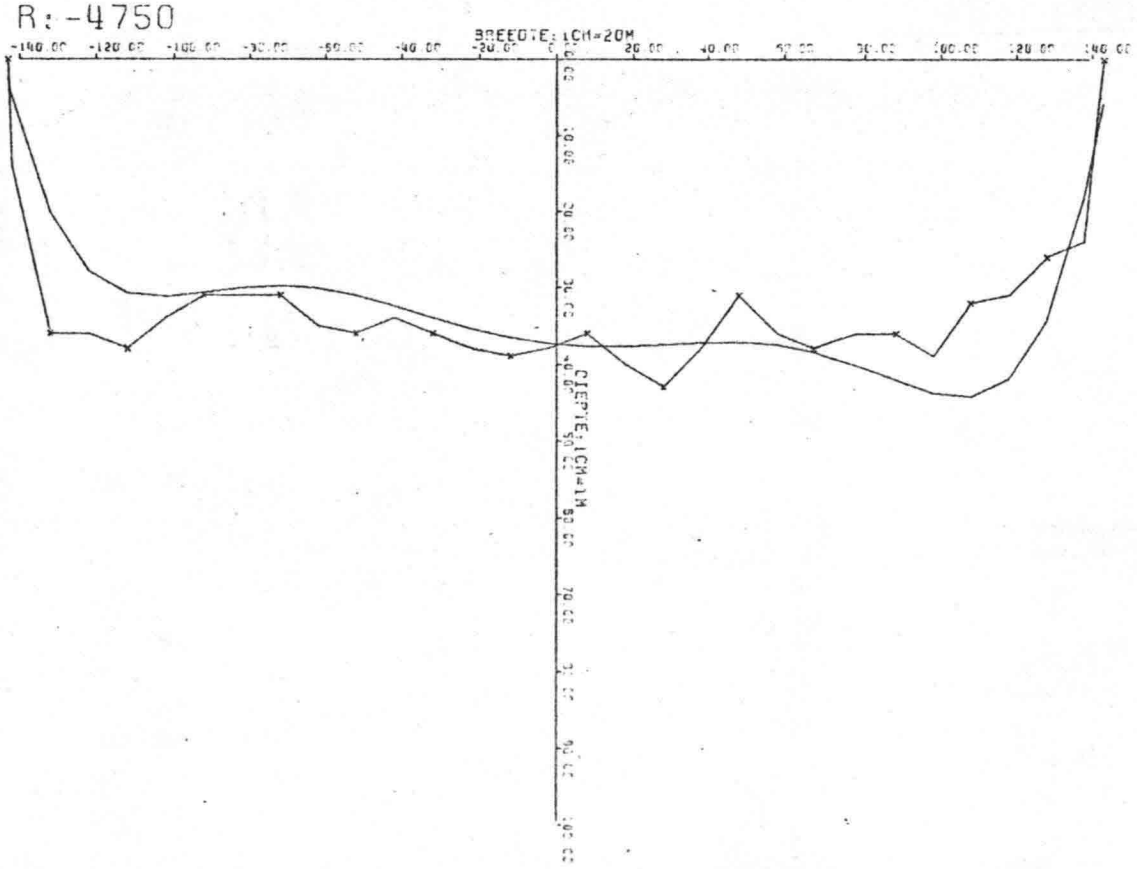

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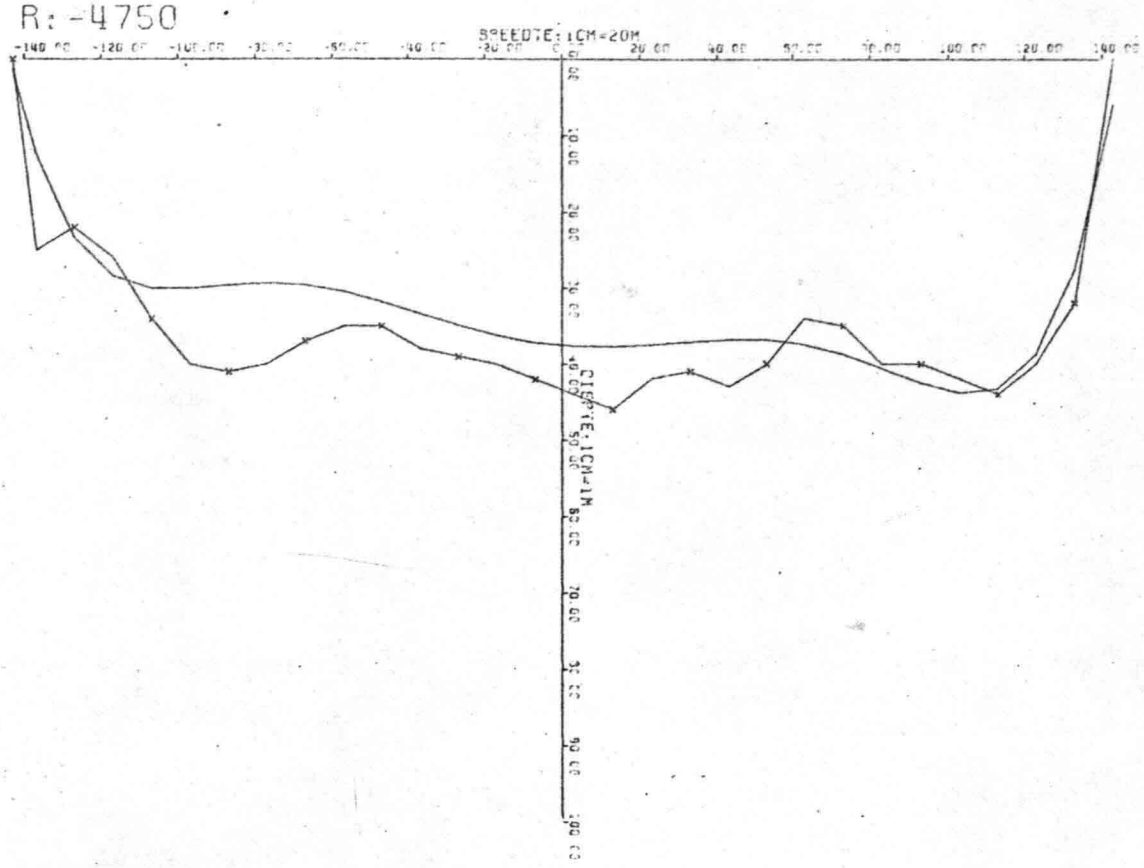

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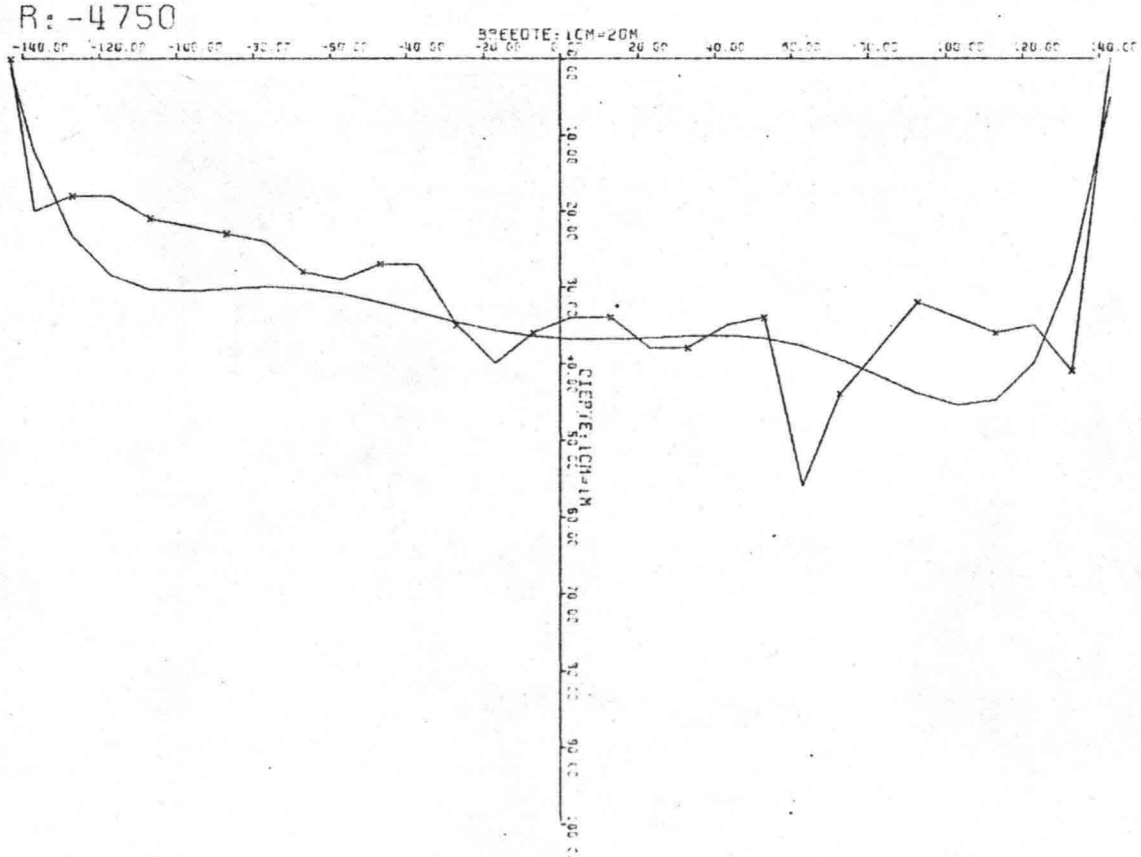

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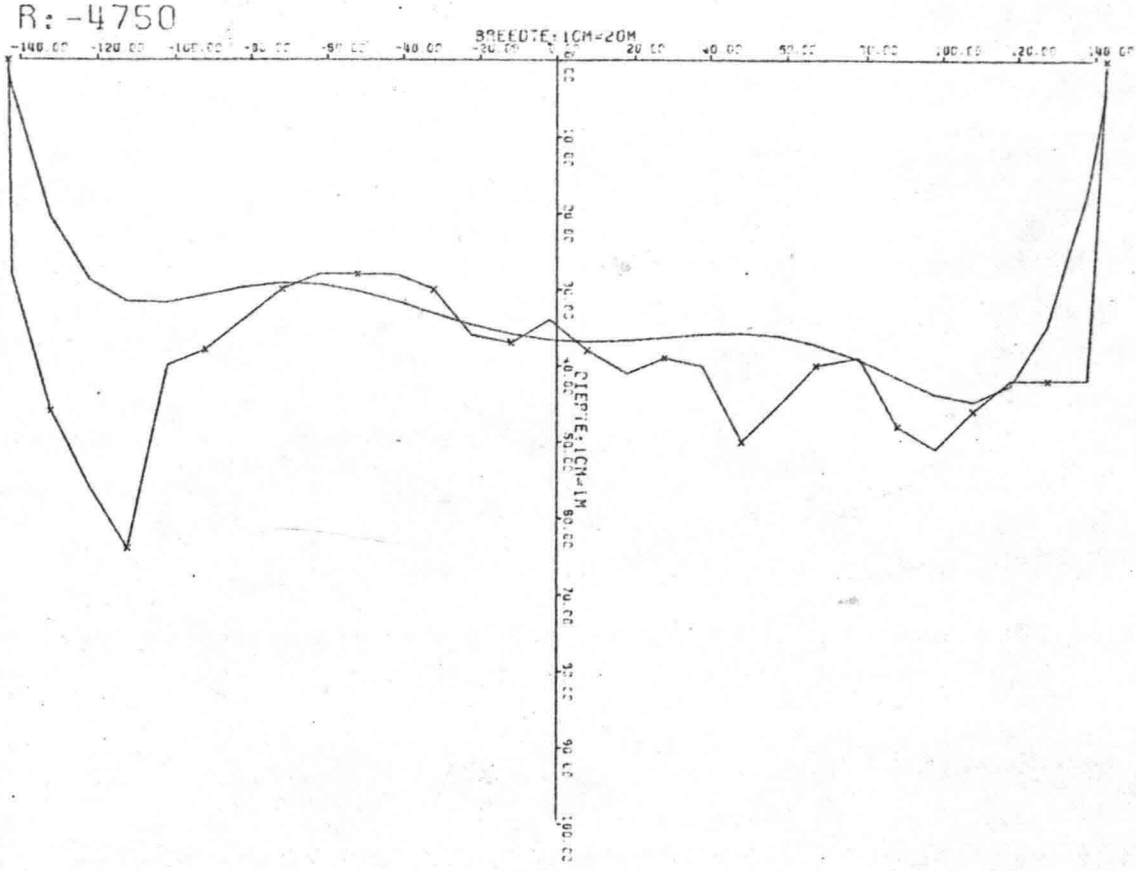

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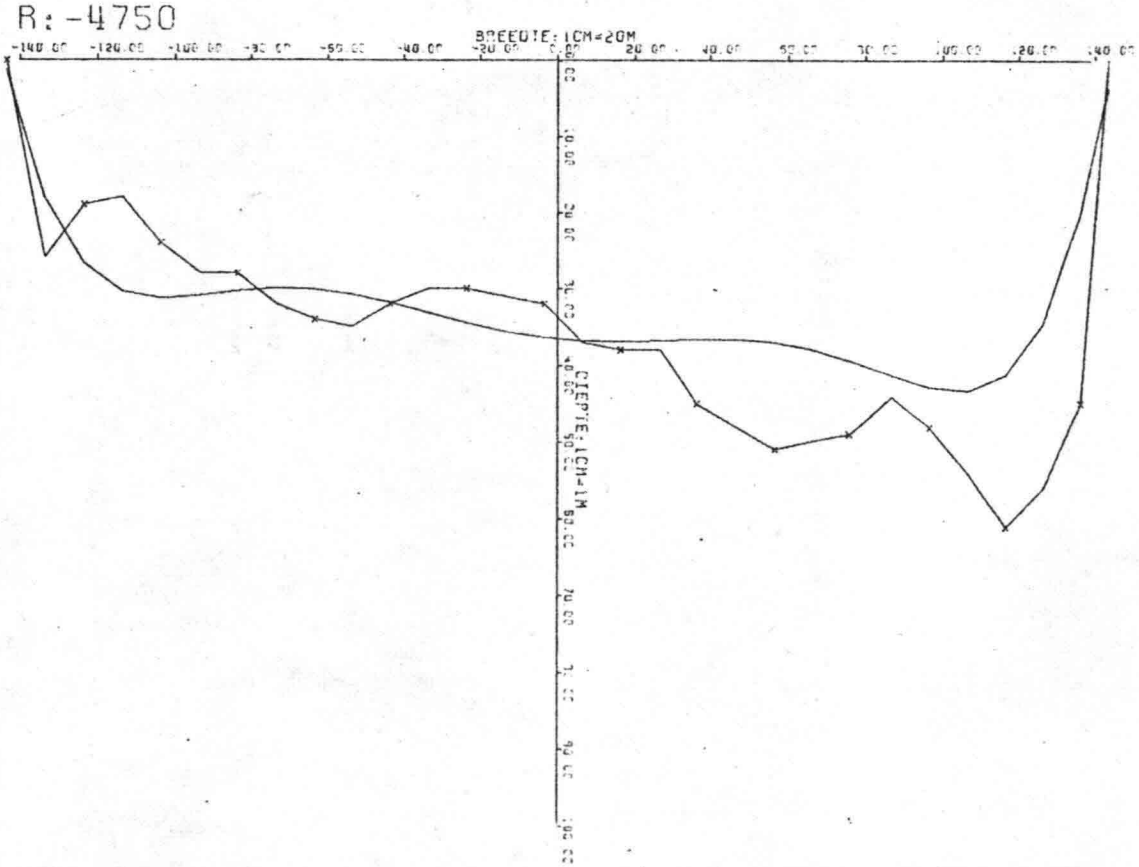

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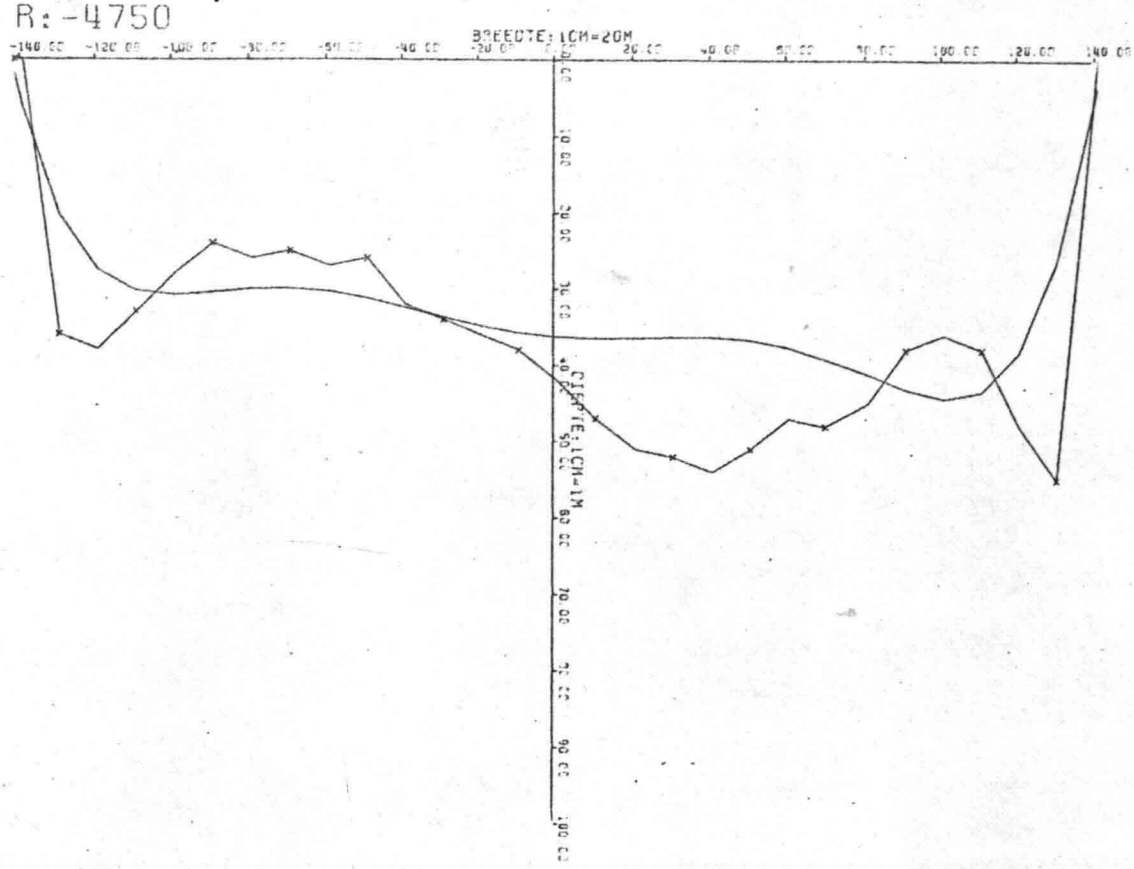

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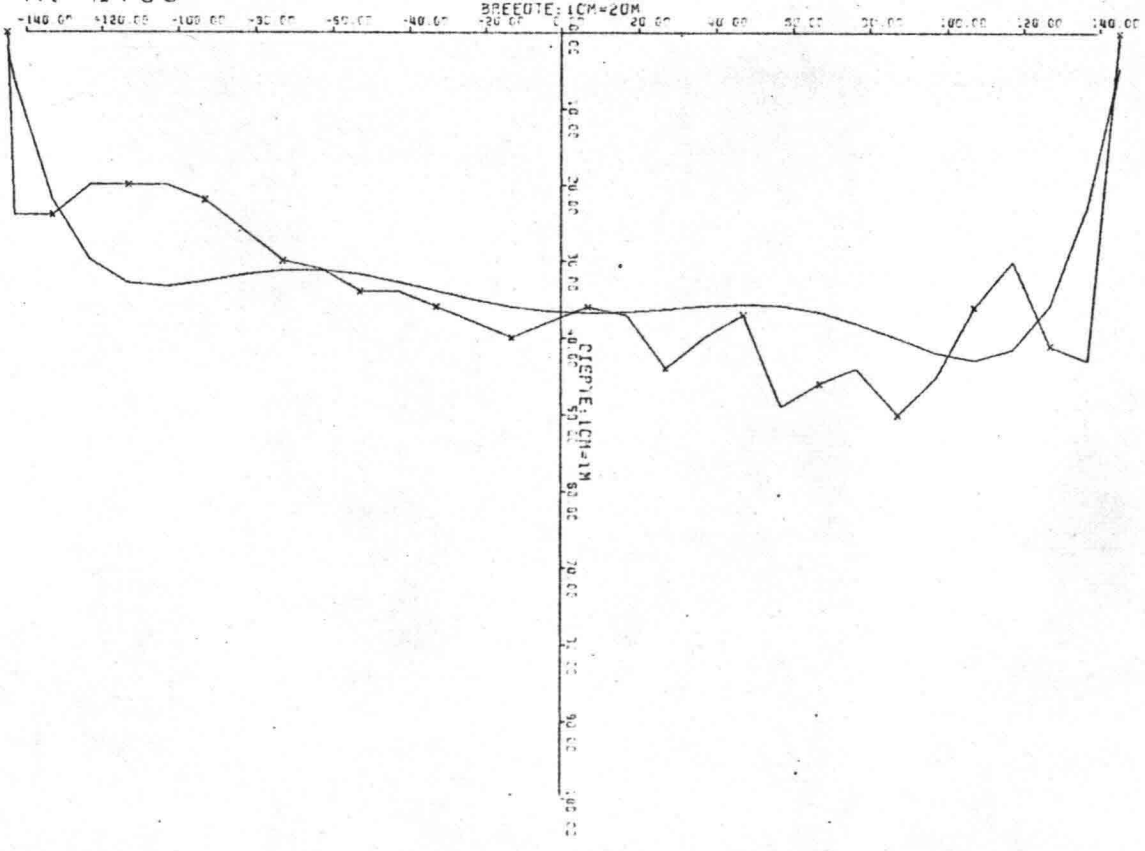

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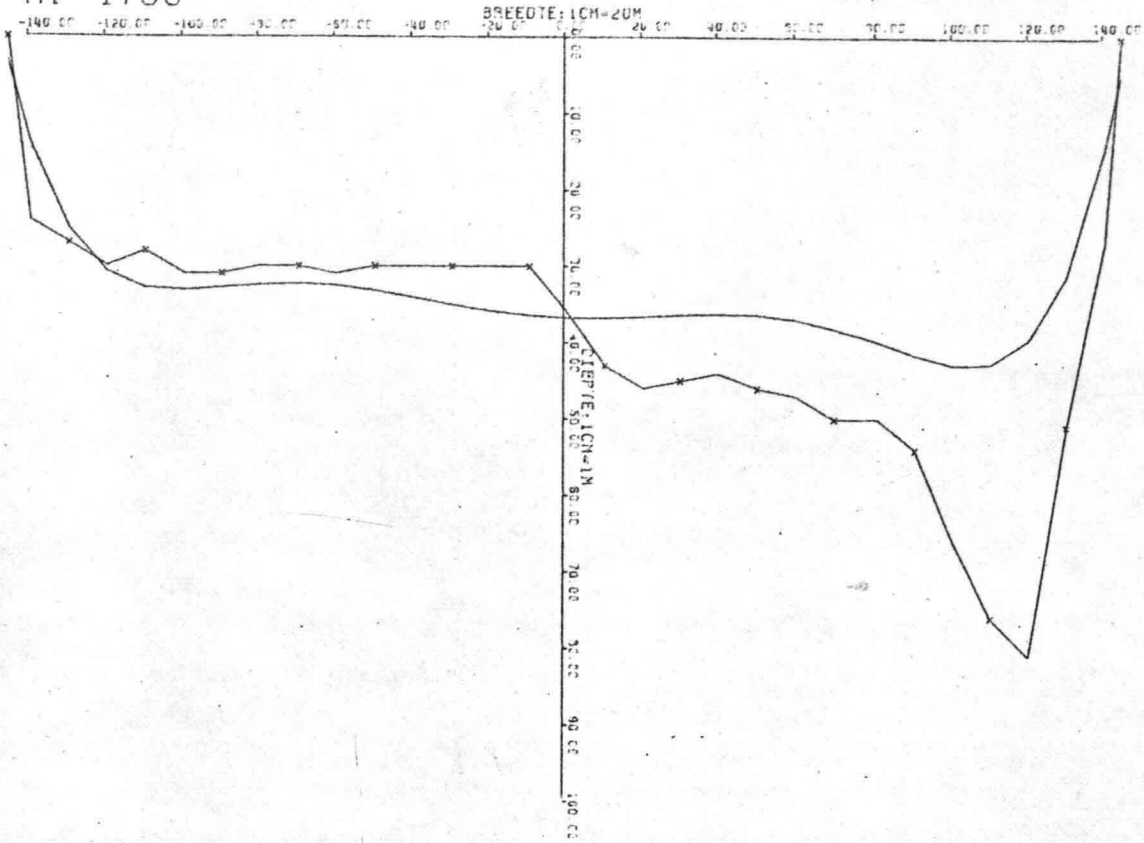

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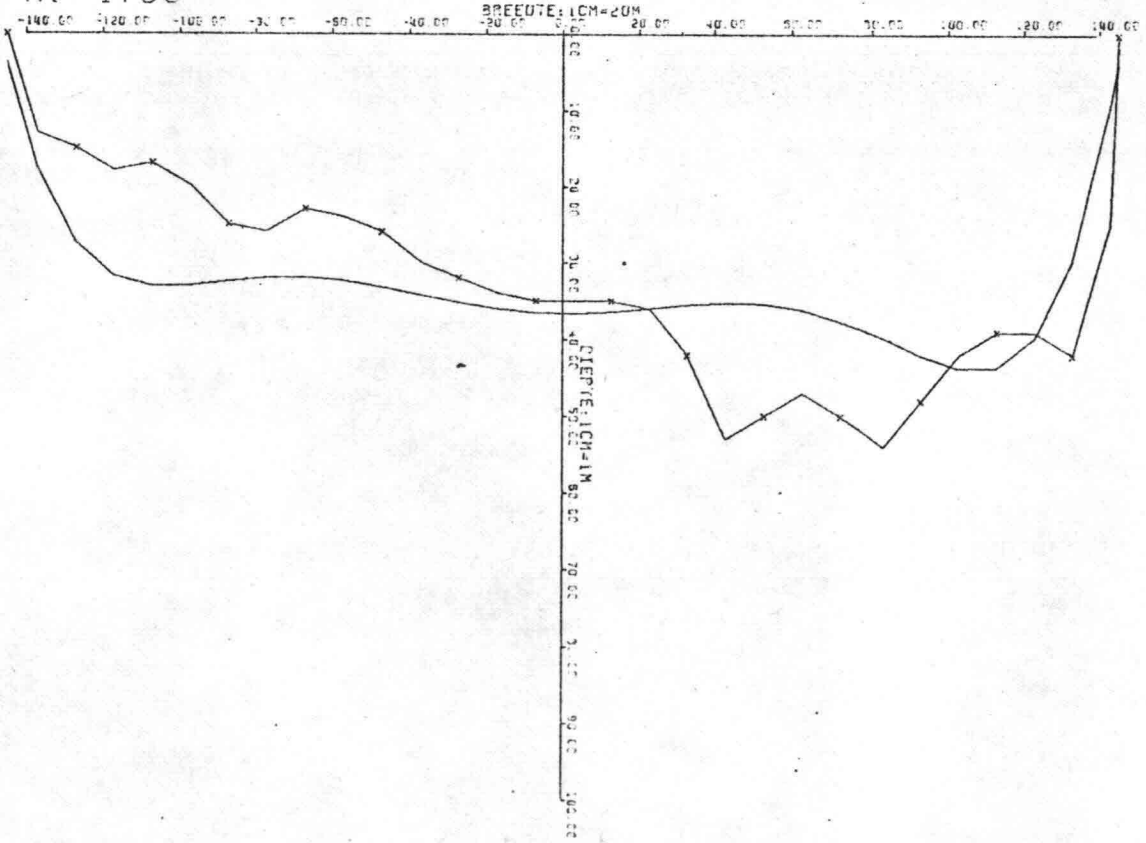


O.L.W. standen 1962
ps Zaltbommel 060 m +NAP
km 937 050
km 938 045
km 939 040
km 940 036
km 941 031
km 942 026
km 943 022
ps Herwijnen 040
ΔZ = Z ARNHM − Z GEREK.
ΔZ = − 114 cm
ΔZ = + 78 cm
ΔZ > + 100 cm
+ 100 cm LVN
0 < ΔZ < + 100 cm
0 cm LVN
− 100 cm < ΔZ < 0 cm
− 100 cm LVN
ΔZ < − 100 cm
BLADINDELING
1:400000
SCHAAL 1:1000
BEHOORT BIJ:
STATISTISCHE VOORSPELLING
VAN DE
BODEMLIGGING IN RIVIERBOCHTEN
H. NOOM
BIJLAGE 14
PLUS-MIN KAART